THE UNIVERSITY OF KANSAS
SCIENCE BULLETIN

Vol. XXIV.] July 15, 1936 [No. 16.

A Generic Revision of American Bythoscopinae and South American Jassinae*

By P. W. OMAN†

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Abstract: The American genera of Bythoscopinae and the South American genera of Jassinae are reviewed. A key to the American subfamilies of Cicadellidae, and keys to the genera of the subfamilies indicated are included, as well as drawings illustrating the head structures and wing venation of the genotypes of most of the genera treated. Taxonomic terminology for leaf hoppers is discussed and some new terms introduced. The new categories described and nomenclatorial changes made are as follows. New genera: *Euragallia* (type, *Agallia furculata* Osborn), *Agalliota* (type, *Agallia punctata* Oman), *Brasa* (type, *Macropsis rugicollis* Dozier), *Neopsis* (type *Pediopsis elegans* Van Duzee), *Bythonia* (type *Nionia* (?) *rugosa* Osborn), *Cariancha* (type *Cariancha cariboba*, n. sp.), *Brincadorus* (type *Brincadorus laticeps*, n. sp.), *Cerrillus* (type *Hecalus notatus* Osborn), *Arrugada* (type *Huleria rugosa* Osborn), *Egenus* (type *Egenus acuminatus*, n. sp.), *Bonamus* (type *Bonamus lineatus*, n. sp.), *Bolarga* (type

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* Submitted to the Department of Entomology and the Faculty of the Graduate School of the University of Kansas in partial fulfillment of the requirements for the degree of Master of Arts, 1935.

† Bureau of Entomology and Plant Quarantine, United States Department of Agriculture.

Parabolocratus bolivianus Osborn), *Garapita* (type *Garapita garbosa,* n. sp.), *Agudus* (type *Agudus typicus,* n. sp.), *Cumora* (type *Cumora angulata,* n. sp.), *Kanorba* (type *Kanorba reflexa,* n. sp.), *Caphodus* (type *Caphodus maculatus,* n. sp.), *Baroma* (type *Baroma reticulata,* n. sp.), *Bahita* (type *Eutettix infuscata* Osborn), *Atanus* (type *Eutettrix dentatus* Osborn), *Hegira* (type *Hegira brunnea,* n. sp.), *Faltala* (type *Faltala brachyptera,* n. sp.), *Brazosa* (type *Thamnotettix picturellus* Baker), *Alaca* (type *Alaca longicauda,* n. sp.), *Onura* (type *Onura eburneola,* n. sp.), *Benala* (type *Deltocephalus tumidus* Osborn), *Cortona* (type *Cortona minuta,* n. sp.), *Agelina* (type *Agelina punctata,* n. sp.), *Neobala* (type *Thamnotettix pallidus* Osborn), *Conala* (type *Spangbergiella fasciata* Osborn), and *Coelidiana* (type *Neocoelidia rubrolineta* Baker). New subgenera: *Aceratagallia* (*Bergallia*) (type *Bythoscopus signatus* Stal), *Deltocephalus* (*Haldorus*) (type *Thamnotettix ventaus* Osborn). New synonymy: *Bythoscopus Germar* (=*Eurinoscopus* Kirkaldy); *Pachyopsis* Uhler (=*Straganiopsis* Baker); *Pachyopsis lactus* Uhler (= *Macropsis idioceroides* Baker); *Spangbergiella* Signoret (= *Bergiella* Baker); *Bolarga bolivianus* (Osborn) (= *Bolarga bolivianus* var. *pallida* Osborn); *Nesosteles* Kirkaldy (= *Anomiana* Distant); *Nesosteles incisus* Matsumura (= *Eugnathodus lacteus* Baker, = *Eugnathodus bisinuatus* DeLong, = *Eugnathodus pallidus* Osborn, = *Eugnathodus bifurcatus* DeLong and Davidson, = *Nesosteles areolata* Osborn, and = *Nesosteles tutuilana* Osborn). Changes in generic assignment of species, other than that indicated in the designation of genotypes and in the new synonymy: *Huleria affinis* Osborn transferred to *Arrugada*; *Scaphoideus mexicanus* Osborn from *Portanus* to *Osbornellus; Scaphoideus boliviensis* Baker, *S. hasemani* Baker, and *S. longicornis* Osborn to *Portanus* Ball; *Platymetopius longiceps* Berg to *Agudus* Oman; *Eutettix neocinctus* Osborn, *E. elegans* Osborn, and *Mesamia fasciata* Osborn to *Menosoma* Ball; *Jassus palliditarsus* Stal, *Eutettix irroratus* Osborn, *E. femoratus* Osborn, *E. laticeps* Osborn, and *Aligia plena* Van Duzee to *Bahita* Oman; *Eutettix tesselatus* Osborn and *Thamnotettix lobatus* Osborn to *Atanus* Oman; *Euscelis quadratulus* Osborn, *E. pallida* Osborn, *Athysanus digressus* Van Duzee, *Thamnotettix capicola* Stal, *Athysanus fusconervosus* Motschulsky, *Jassus taeniaticeps* Kirschbaum, *Athysanus indicus* Distant, *A. nanus* Distant, *A. atkinsoni* Distant, *A. simillimus* Matsumura, and *A. transversalis* Matsumura to *Exitianus* Ball; *Thamnotettix amazonensis* Osborn to *Brazosa* Oman; *Agallia multipunctata* Osborn to *Alaca* Oman; *Thamnotettix luteosus* Baker to *Chlorotettix* Van Duzee; *Cicadula maidis* DeLong and Wolcott to *Baldulus* Oman; *Euscelis quadrimaculata* Osborn, and *Thamnotettix guaporensis* Oman to *Neobala*; *Neocoelidia bimaculata* Baker, *N. modesta* Baker, *N. inflata* Osborn, and *N. croceata* Osborn to *Coelidiana* Oman; *Neocoelidia smithii* Baker to *Chinaia* Bruner and Metcalf. *Idiocerus* Lewis is placed in the Eurymelinae, *Ionia* Ball in the Bythoscopinae and *Chinaia* Bruner and Metcalf in the Jassinae. *Pachyopsis* Uhler is removed from synonymy. *Ionia* Ball is considered as a subgenus of *Aceratagallia* Kirkaldy, and *Deltopinus* Ball, *Cloanthus* Ball, *Nasutoideus* Ball, and *Convelinus* Ball are considered as subgenera of *Scaphytopius* Ball. Types of the new species are in the collection of the United States National Museum.

INTRODUCTION

FOR over a century and a half workers in taxonomic entomology have been contributing to our knowledge of the Cicadellidae or leaf hoppers of South America. Most of these contributions have been concerned primarily with the description of new species, these being assigned to the then established European or North American genera known to the describer. Although a great deal of work has been done in recent years on the proper differentiation of the North American genera, the proper assignment of the South American representatives of these groups has not kept pace, and what few genera have been erected for South American forms have in most cases been based on unusual and phylogenetically isolated species, so that their erection adds little to a natural arrangement of the more complex portions of the higher groups. Consequently, the accepted limits of the established genera have been so enlarged by the inclusion of many species representing diverse evolutionary trends that these heterogeneous groups cannot be defined and become useless as a basis for classification. It is similarly impossible to use the mass of specific descriptions as a basis for the identification of species in the group, and it becomes evident that before any appreciable order can be brought from the confusion that exists, genera must be defined, keys presented for the separation of those genera, and the previously described species referred to their correct generic positions. The present paper is an attempt to do this for the subfamilies indicated, but in many cases the assignment of previously named species to their respective genera has been impossible, owing to the lack of adequate descriptions, and must await the examination of types or authentically determined specimens.

At the time this study was undertaken it was the intention of the writer to limit it to the South American fauna, but the North American Bythoscopinae were treated also when it became apparent that they could be included without greatly enlarging the paper. The writer realizes the inadequacy of a restricted fauna as a basis for a generic revision, and has endeavored to eliminate errors as far as possible by constant reference to literature and collections dealing with other faunal regions. In this he has been particularly fortunate in having available for study genotypes of most of the European, Philippine, and Australian genera and a considerable number of African and Indian species. Generic concepts here presented have been based primarily on the study of genotypes, plus as many other species as were available. If authentically determined material of the type species of a genus has not been available for study it is so stated in the discussion of the genus.

ACKNOWLEDGMENTS

The preparation of this paper has been expedited by the ready assistance given by various entomological workers. Expression of gratitude is made to Dr. R. H. Beamer, of the University of Kansas, under whose direction the major portion of the work was undertaken and who has assisted much with notes and suggestions; to Mr. H. G. Barber, of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, who has given freely of his time for the discussion of problems of common interest to hemipterists; to Mr. R. E. Snodgrass, of the same bureau, for the generous assistance in problems of a morphological nature; to Dr. E. D. Ball, of the University of Arizona, for valued suggestions concerning taxonomic terminology; to Mr. E. P. Van Duzee, of the California Academy of Sciences, for kind suggestions and encouragement; to Dr. Hugo Kahl, curator of insects at the Carnegie Museum, for many kindnesses while the writer was working at that institution, and for the loan of valuable material; to Mr. C. H. Ballou, of Costa Rica, for specimens of *Chinaia bella* Bruner and Metcalf; to Mr. J. N. Knull, curator of insects at Ohio State University, for the loan of valuable material and for notes and drawings of other material not available to the writer.

MORPHOLOGICAL NOTES AND TERMINOLOGY

The writer makes no attempt in the present paper to enter into a detailed discussion of the morphology of the Cicadellidae, but proposes merely to define the terms used and to illustrate the structures mentioned sufficiently to permit the user of the paper to interpret correctly and easily the verbal descriptions of the writer. A necessity for so doing has arisen through the introduction of a few terms new to the literature on Homoptera, and the adoption of others that have been little used by taxonomic workers. The choice of terms has been made only after careful consideration of the needs of the taxonomist, recognizing that for the purpose of writing intelligible and at the same time reasonably brief descriptions, terminology borrowed from morphological workers is frequently unsatisfactory.

According to recent work on the insect head by Snodgrass, 1935 (pp. 111, 329-331), the frons in the Cicadellidae is greatly reduced and not evident as a distinct area. The area previously referred to by most workers as frons, is, according to Snodgrass, the postclypeal plate, while the clypeus of certain authors is the anteclypeal plate of Snodgrass. The writer has chosen, for taxonomic work, to restrict the term clypeus to the postclypeus of Snodgrass and use the term clypellus for his anteclypeus (Pl. XXVII, fig. 1B). The clypeus and clypellus together constitute the front. The entire cephalic aspect of the head is referred to as the face (Pl. XXVII, fig. 1B), and the area between the eye and the adjacent ocellus, or between the eye and the lateral frontal suture, if it is present, is referred to as the ocellocular area. The entire dorsal surface of the head, exclusive of the eyes, is called the crown (Pl. XXVII, fig. 1C).

In referring to the veins of the wings, the Comstock-Needham system has been followed with the now generally accepted emendations, as indicated (Pl. XXVII, figs. 1 and 1A), and certain other modifications in naming which are now well established in literature. The forewing of leaf hoppers normally has a basal cross vein between media and cubitus, called the first cross vein, and frequently has a second cross vein in the region at the base of the central anteapical cell. The claval suture appears to be cubitus 2, but the name claval suture is here retained. For the cells of the wings the writer has retained the well-established terms in use with but few additions. The anteapical cells, typically three in number, are designated inner, central, and outer, respectively, beginning nearest the claval suture, and the inner is considered as being present even though the second cross vein between M and Cu is absent, in which case the cell remains open basally. Similarly these cells are considered as distinct entities even though divided by extra cross veins. The apical cells, for purposes of stability in naming, are numbered from the inner margin of the wing outward, the third apical cell thus always having its base at the distal end of the central anteapical cell.

CHARACTERS OF THE SUBFAMILIES

The following key is presented for the separation of the subfamilies of Cicadellidae known to occur in America.

1. Ocelli situated near disk of crown, remote from eyes and from anterior margin of crown 2

Ocelli on or near distal margin of crown, or on face, or absent 3

2. (1) Lateral frontal sutures extending over obtuse anterior margin of crown to vicinity of ocelli. Hind wing usually with submarginal vein evanescent from hamulus to apex, leaving only three apical cells. Form usually somewhat cylindrical, not flattened ....Cicadellinae

Lateral frontal sutures terminating below anterior margin of crown, which is usually distinct. Hind wing always with four apical cells. Form flattened dorsoventrally .... Gyponinae

3. (1) Ocelli on face, which is separated from crown by a distinct margin....Koebelinae

Ocelli either on face or not, or absent, but if on face, then face and crown not separated by a distinct margin 4

4. (3) Lateral frontal sutures terminating at or slightly above antennal pits. Intermediate tibiae without numerous large, spinelike setae ....Bythoscopinae

Lateral frontal sutures extending above antennal pits to or near ocelli or ocellar vestiges. Intermediate tibiae usually with numerous large, spinelike setae.... 5

5. (4) Distance between ocelli less than distance between antennal pits. Face broad and relatively flat, crown always short and broad. Ocelli always on face. Eurymelinae

Distance between ocelli or ocellar vestiges equal to or greater than distance between antennal pits. Face usually not especially flat, crown of various shapes. Ocelli on or near margin between crown and face or absent 6

6. (5) Forewings usually with cross veins anterior to the apical series. Veins distinct basally; ocelli usually present. Facial sclerites not highly fused, lori not particularly elongated ....Jassinae

Forewings usually without cross veins anterior to the apical series. Veins indistinct basally; ocelli often absent. Facial sclerites showing a high degree of fusion, lori unusually long and narrow. Small, fragile forms, usually brightly colored ....Eupteryginae

In the consideration of the leaf hopper fauna of the entire world, or even that of one of the major faunal regions, it soon becomes evident that the differentiation of subfamilies is an extremely difficult task. Consequently, the writer freely admits that the key presented above is unsatisfactory in some respects, but feels that it is better to attempt to key out intermediate forms with the use of somewhat indefinite characters, or a combination of characters, than to ignore such forms and use brief but positive alternatives.

Idiocerus and allies have been removed from the Bythoscopinae, with which they have little in common, and referred to the Eurymelinae. This will at first seem to be an erroneous disposition of the group, since Eurymela shows so many cercopid-like characters, but a study of species of Eurymeloides, Churna, and other Australian and Oriental genera convinces the writer that the arrangement is a natural one.

Kirkaldy, 1906 (p. 345), McAtee, 1934 (p. 94), and perhaps others have pointed out that the much-used character of the position of the ocelli or ocellar vestiges is not a sufficient basis for the separation of the Jassinae and Bythoscopinae. McAtee proposes to base the separation on the development of the bristles or spines on the lower surface of the fore tibiae, but the writer believes this to be even less reliable than the position of the ocelli. The separation here proposed is indicated in the preceding key. In addition to the characters indicated, the transverse suture on the scutellum is usually curved forward laterally in the bythoscopines and backward in the jassines, although this is by no means a reliable character.

According to the above interpretation it has been found necessary to place *Ionia* Ball in the Bythoscopinae as a relative of Aceratagallia and to transfer *Chinaia* Bruner and Metcalf from the Bythoscopinae to the Jassinae, where it is closely related to Jassus and allies. The writer has been unable satisfactorily to place *Dicyphonia picturata* Osborn, 1924, but feels certain that the assignment of the species to the genus *Dicyphonia* Ball is erroneous.

KEY TO THE AMERICAN GENERA OF BYTHOSCOPINAE

1. Lateral margins of pronotum carinate and moderately long. Form distinctly depressed. First apical cell of forewing very narrow. Ledges above antennal sockets transverse or nearly so 11

Lateral margins of pronotum short and not carinate. Form often broad but not depressed. First apical cell of forewing normal. Ledges above antennal sockets, when present, always oblique 2

2. (1) Hind wing with three apical cells. Distance between ocelli equal to, or usually greater than, twice the distance from ocellus to eye 9

Hind wing with four apical cells. Distance between ocelli not over twice distance from ocellus to eye 3

3. (2) Distance between ocelli equal to or less than distance from ocellus to eye. Lateral margins of genae not distinctly sinuated below eyes 8

Distance between ocelli always greater than distance from ocellus to eye. Lateral margins of genae usually distinctly sinuated below eyes 4

4. (3) Surface of pronotum finely granulated, neither coarsely pitted nor transversely rugulose 6

Surface of pronotum either coarsely pitted or transversely rugulose 5

5. (4) Surface of pronotum transversely rugulose .... *Aceratagallia*, p. 350

Surface of pronotum coarsely pitted .... *Agalliana* p. 350

6. (4) Posterior margin of crown sinuately curved laterally and crown distinctly extended laterally behind eye. Length of crown medially usually less than next the eye. Eyes never bulbous .... *Agalliopsis*, p. 351

Posterior margin of crown smoothly rounded with only a narrow lateral extension behind eye. Length of crown uniform, or, if shorter medially, eyes somewhat bulbous 7

7. (6) Crown shorter medially than eyes; eyes somewhat bulbous. Face rather flat, pronotum short. Seventh ventral segment of female short and exposing underlying membranes, styles of male genitalia not forked or with forks obsolete .... *Euragallia*, p. 351

Crown of uniform length. Face distinctly convex, pronotum longer in proportion to width. Genital characters not as above .... *Agallia*, p. 351

8. (3) Forewing at least partly membranous, tapering apically. Pronotum and scutellum not distinctly elevated or "humped" in profile .... *Agalliota*, p. 351

Forewing entirely opaque and subcoriaceous, broad apically. Pronotum and scutellum distinctly elevated or "humped" in profile .... *Brasa*, p. 352

9. (2) Hindwing with inner fork of radius and outer fork of media united apically (Pl. XXVII, fig. 2A); submarginal vein present between hamulus and apex of wing .... *Neopsis*, p. 353

Hind wing with forks of veins not united apically; submarginal vein evanescent from hamulus to apex of apical cells (Pl. XXVII, fig. 4) 10

10. (9) Pronotal striae transverse; anterior margin of pronotum broadly rounded, *Oncopsis*, p. 353

Pronotal striae oblique, converging anteriorly; anterior margin of pronotum angulate medially .... *Macropsis*, p. 352

11. (1) Hind wing with three apical cells (Pl. XXVII, fig. 2A). Inner apical margin of forewing and first apical cell membranous and appendix-like, frequently bent down at a distinct angle to remainder of wing, *Bythoscopus*, p. 353

Hind wing with four apical cells. Inner apical cell of forewing not as above. *Pachyopsis*, p. 354

DESCRIPTIONS OF BYTHOSCOPINE GENERA

Aceratagallia Kirkaldy*

Aceratagallia Kirkaldy, Hawaiian Sugar Planters' Assoc. Expt. Sta., Div. Ent. Bull. 3, p. 30, 1907.

Type of the genus, *Bythoscopus sanguinolentus* Provancher, 1872 (p. 376), a Nearctic species. As defined in the key, this genus occurs in the Nearctic, Neotropical, Palearctic, and Oriental regions. The typical forms, referred to the subgenus Aceratagallia, are known only from North America.

The typical forms of the genus, and those belonging to the other two subgenera, may be differentiated by the following key:

1. Styles of internal male genitalia forked. South America .... *Bergallia*
   Styles of internal male genitalia not forked. North America 2
2. (1) Very small, extremely robust species, ocelli visible from above. Color, reddish-brown .... *Ionia*
   Larger and less robust species, the ocelli not visible from above. Color usually some shade of fuscous, brown, or cinereous, never reddish-brown, ... *Aceratagallia*

Aceratagallia subgenus *Ionia* Ball

Ionia Ball, Bull. Brooklyn Ent. Soc., vol. 28, p. 226, 1933.

Type of the subgenus, *Ionia triunata* Ball, 1933. This is the only known representative of the subgenus. The writer does not consider the difference in size and position of the ocelli sufficient basis for treating Ionia as distinct from Aceratagallia, with which it agrees in having the frontal sutures terminating at the antennal sockets, a transversely striated pronotum, and typical aceratagallian genitalia in the males.

Aceratagallia subgenus *Bergallia*, new subgenus

Type of the subgenus, *Bythoscopus signatus* Stål, 1859, a Neotropical species known only from Argentina. This subgenus is erected to accommodate the South American representatives of Aceratagallia.

Agalliana Oman

Agalliana Oman, U. S. Dept. Agr. Tech. Bull. 372, p. 70, 1933.

Type of the genus *Bythoscopus sticticollis* Stål, 1859 (p. 291), a Neotropical species. The genus is apparently limited in distribution to the Neotropical region, and is known to include, in addition to the genotype, *Agalliana grossa* Oman, *ensigera* Oman, *fusca* Oman, and *ancora* Oman, 1934.

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* The writer is treating the American genera of the *Agallia* group in detail in a forthcoming publication and considers it unnecessary to include complete descriptions here.

Agallia Curtis

Agallia Curtis, Ent. Mag., vol. 1, p. 193, 1833.

Type of the genus, *Agallia consobrina* Curtis, 1833, which is at present considered to be a synonym of *Jassus puncticeps* Germar, 1832 (fasc. 17, p. 2), a Palearctic species. The genus (*sensus strictus*) is known to occur commonly in the Palearctic, Nearctic, and Neotropical regions, and possibly also in the Oriental region, although a careful study of the Oriental species may reveal characters which will justify generic segregation.

Euragallia, new genus

Type of the genus, *Agallia furculata* Osborn, 1923, a Neotropical species. So far as known the genus is limited in distribution to the Neotropical region. Euragallia bears a superficial resemblance to *Moonia* Distant, type, *Moonia sancita* Distant, 1908, from British India, but differs in the position of the ocelli, the shape of the pronotum, and other pertinent characters, and is more closely related to *Agallia* Curtis.

Agalliopsis Kirkaldy

Agalliopsis Kirkaldy, Hawaiian Sugar Planters' Assoc. Expt. Sta., Div. Ent. Bull. 3, p. 31, 1907.

Type of the genus, *Jassus novellus* Say, 1831, an American species. The genus is apparently limited in distribution to the Nearctic and Neotropical regions.

Agalliopsis bears a distinct resemblance to *Nehela* Buchanan White, type *Nehela vulturiana* Buchanan White, 1878, from St. Helena (synonym, *Igerna* Kirkaldy, 1903 [*Pachynus* Stål, 1866, not *Pachynus* Bonaparte, 1854], type *Bythoscopus* (*Oncopsis*) *bimaculaticollis* Stål, 1855), but that genus has the ocelli close together, and although the crown extends laterally behind the eyes, it is not shortened medially. *Nehela* appears to be more closely related to *Agallia* Curtis.

Agalliota, new genus

Type of the genus, *Agallia punctata* Oman, 1934, a Neotropical species. So far as known the genus is limited in distribution to the Neotropical region.

Brasa, new genus

(Pl. XXVIII, fig. 1)

Resembling *Macropsis* Lewis in general form, but more closely related to *Agallia* Curtis by the venation of the hind wing. Differing from Macropsis in having four apical cells in the hind wing and in having no pronotal striations, and from Agallia and related genera by the position of the ocelli, which are close together, the broad forewings, and the "humped" appearance of the thorax.

Crown very short and of uniform length. Face slightly convex, frontal sutures distinct, genae broad. Pronotum several times as long as vertex, lateral margins obsolete, disk and posterior portion strongly elevated, anterior margin with depressed areas behind eyes. Scutellum distinctly elevated above forewings, especially anteriorly. Forewing opaque and subcoriaceous, nearly flat and held in a nearly vertical position as in *Macropsis*, apex broad and rounded, appendix very small or absent, closed anteapical cells two in number.

Type of the genus, *Macropsis rugicollis* Dozier, 1926 (p. 264), known only from the island of Haiti. No other species known to the writer belong in the genus.

Macropsis Lewis

Macropsis Lewis, Trans. Ent. Soc. Lond., vol. 1, p. 49, 1836.

Pediopsis Burmeister, Gen. Ins., pl. 10, 1838. (Type, *Jassus tiliae* Germar, 1831, a Palearctic species now known to occur in the northeastern part of the United States.)

Galboa Distant, Trans. Linn. Soc. Lond., vol. 13, pp. 45-46, 1909. (Type *Galboa typica* Distant, 1909, from Seychelles.)

Crown very short, angled medially. Face convex, lori and genae small and indistinctly separated from each other and from front. Pronotum several times as long as vertex, pronotal striae distinct and oblique, converging anteriorly. Scutellum large. Forewing sometimes subcoriaceous, appendix very small or absent. Last ventral segment of female with lateral points of attachment very short, posterior margin with only faint notches and few modifications useful in specific separation. Male plates long, slender, and fingerlike.

Type of the genus, *Cicada virescens* Gmelin, 1788 (p. 2111), a Palearctic species now known to occur in the Nearctic region also. As here considered the genus is known to be distributed throughout the world with the exception of South America. Typical species are particularly abundant in the Nearctic and Palearctic regions. *Galboa* Distant is included as a synonym on the authority of China, 1925.

Oncopsis Burmeister

(Pl. XXVII, fig. 4)

Oncopsis Burmeister, Gen. Ins., pl. 10, 1838.

Crown short and broad, not angled as in Macropsis. Clypeus more convex than in Macropsis and face shorter and broader. Pronotum with striae transverse, but usually not so coarse as those of Macropsis. Forewings broad apically, appendix absent. Genitalia as in Macropsis.

Type of the genus, *Cicada flavicollis* Linnaeus, 1761 (p. 891), a Palearctic species. So far as known the genus is limited in distribution to the Nearctic and Palearctic regions.

Neopsis, new genus

Intermediate in character between *Macropsis* Lewis and *Bythoscopus* Germar; related to the former by the shape of the pronotum and head, and resembling the latter in the venation of the hind wing. Differing from Macropsis in having the inner fork of the radius and the outer fork of the media of the hind wing anastomosing distally, and from Bythoscopus in having the lateral pronotal margins obsolete and without carinae.

Crown short and rounded to the front, subangular medially as in Macropsis. Clypellus small, genae comparatively narrow. Pronotum several times as long medially as median length of vertex, surface with numerous fine, nearly transverse striae. Forewing tapered distally, not broad as in Macropsis, venation irregular and difficult to see, the normally central anteapical cell apparently open basally, appendix absent. Genitalia of both sexes differing from the conventional Macropsis type.

Type of the genus, *Pediopsis elegans* Van Duzee, 1907 (p. 58), described from Jamaica and known to occur in South America. No other species are referred to the genus.

Bythoscopus Germar

(Pl. XXVII, fig. 2, 2A)

Bythoscopus Germar, Silb. Rev. Ent., vol. 1, p. 180, 1833.

Batracomorphus Lewis, Trans. Ent. Soc. Lond., vol. 1, p. 31, 1836. (Type, *Batracomorphus irroratus Lewis*, 1836, a Palearctic species.)

Stragania Stal, Rio Jan. Hemip., vol. 2, p. 49, 1862. (Type, *Stragania ornatula* Stal, 1862, a Brazilian species.)

Gargaropsis Fowler, Biol. Cent. Amer. Homop., vol. 2, p. 167, 1896. (Type, *Gargaropsis innervis* Fowler, 1896, a Mexican species.)

Eurinoscopus Kirkaldy, Hawaiian Sugar Planters' Assoc. Expt. Sta., Div. Ent. Bull. 1, p. 346, 1906. (Type, *Eurinoscopus lentiginosus* Kirkaldy, 1906, an Australian species.) (New synonymy.)

Crown short and broad, but distinctly longer in proportion to its length than that of most genera of the subfamily. Crown, pronotum, scutellum, and portions of face usually with fine, transverse striae. Face very short and broad, clypellus but slightly longer than broad, lateral margins of genae strongly sinuated. Forewings with surface usually thickly set with fine setae, sometimes subcoriaceous. Male plates usually covered by the unusually large valve.

Type of the genus, *Cicada lanio* Linnaeus, 1761 (p. 892), a Palearctic species. The genus appears to be practically cosmopolitan in distribution and is represented in North America by a number of species. South American species referred to the genus include *Stragania ornatula* Stål, *S. divisa* Stål, and *S. pallescens*, Stål, 1862; *Macropsis smithii* Baker, *M. sordidus* Baker, and *M. stramineus* Baker, 1900; *Bythoscopus pallidus* Osborn and *B. nigrifrons* Osborn, 1924; and will probably contain some other species described by Stål.

The writer has examined the genotype of *Eurinoscopus* Kirkaldy and is of the opinion that the additional elytral cross veins which he mentions in his description are not sufficient basis for retaining that genus as distinct from Bythoscopus.

Pachyopsis Uhler

(Pl. XXVII, fig. 3)

Pachyopsis Uhler, Bull. U. S. Geol. Geog. Surv., vol. 3, p. 466, 1877.

Straganiopsis Baker, Invert. Pacif., vol. 1, p. 10, 1903. (Type, *Macropsis idioceroides* Baker, 1900, which is at present considered to be a synonym of *Pachyopsis laetus* Uhler, 1877.) (New synonymy.)

The genus is here removed from synonymy, having previously been considered a synonym of *Bythoscopus* Germar. Characters of diagnostic value are given below.

Closely related to *Bythoscopus* Germar, with which it has been placed, but differing from that genus in having four apical cells in the hind wing, and in having the face less strongly receding.

Characters of the head and pronotum as in Bythoscopus except that the clypellus is broader and the lateral margins of the pronotum are shorter and less diverging posteriorly. Forewing with a small appendix or none, inner apical cell not membraneous as in *Bythoscopus*.

Type of the genus, *Pachyopsis laetus* Uhler, 1877, a Nearctic species, known to occur only in the southwestern part of the United States. The genus will also contain, in addition to *Macropsis laetus* var. *pactus* Ball, 1900, an apparently undescribed species from Panama and two South American species.

KEY TO THE SOUTH AMERICAN GENERA OF JASSINAE

1. Second cross vein of forewing joining media anterior to base of central anteapical cell (Pl. XXVIII, fig. 2); apex of forewing rounded, appendix small. Second apical cell of hind wing very narrow. Head extremely short and broad, ocelli distant from the eyes (Pl. XXXI, fig. 1), *Bythonia*, p. 358

Second cross vein of forewing, if present, joining central anteapical cell (except in *Idiotettix,* which has the forewing subtruncate apically and the appendix very large). Second apical cell of hind wing rarely narrow. Width of head and position of ocelli variable........................ 2

2. (1) Head, thorax, and at least basal portions of forewings with numerous circular pits. Hind wing with apical margin concavely excavated opposite third and fourth apical cells (Pl. XXVIII, fig. 3). Color black...... *Nionia,* p. 358

Head, thorax, and forewings without distinct circular pits. Apex of hind wing convexly rounded. Color variable, seldom black................ 3

3. (2) Submarginal vein of hind wing evanescent or joining wing margin opposite apical cells (Pl. XXVIII, fig. 4A). Forewing without appendix, *Xestocephalus,* p. 359

Submarginal vein of hind wing present and not joining wing margin apically. Forewing either with or without appendix.......................... 4

4. (3) Head and anterior portion of pronotum coarsely and irregularly rugose (Pl. XXXI, fig. 7) ....*Arrugada,* p. 362

Head and pronotum not as above.................................... 5

5. (4) Costal area of hind wing much expanded for a short distance near base (Pl. XXX, fig. 9A). Forewing always broad.......................... 56

Costal area of hind wing not expanded basally. Forewing either broad or narrow 6

6. (5) Ocellocular area produced into a distinct ledge above the antennal socket, 51

Ocellocular area not produced into a ledge above antennal socket.......... 7

7. (6) Cubitus of forewing appearing forked* near first cross vein (Pl. XXVIII, fig. 7). Forewing never with more than one closed anteapical cell and usually only one claval vein ....*Spangbergiella,* p. 364

Forewing not as above 8

8. (7) Forewing acuminate distally and without appendix (Pl. XXVIII, fig. 6). Crown flat and anterior margin carinate......................*Egenus,* p. 363

Forewing not acuminate, or if so, then crown neither flat nor carinate anteriorly 9

9. (8) Forewing with two closed anteapical cells, the outer short and subtriangular, the central strongly constricted; appendix lacking (Pl. XXVIII, fig. 9). Crown broad and flat, with anterior margin carinate..........*Luheria,* p. 363

Forewing not as above, or if so, then crown not flat.................... 10

10. (9) Ocelli exactly on crown margin over one third the distance from eyes to median line. Crown flat, anterior margin carinate; lateral margins of pronotum long and carinate..............................*Cerrillus,* p. 362

Ocelli either near eyes, or crown and pronotum with margins not carinate, or both 11

11. (10) Forewing with only one closed anteapical cell or with none. Appendix always present 47

Forewing with two or more closed anteapical cells. Appendix present or absent 12

12. (11) Clypellus with lateral margins straight and parallel except basally; apex of clypellus extended beyond normal curve of lateral margins of genae (Pl. XXXIV, fig. 9A). Apex of head subconical......................... 46

Clypellus usually constricted, with margins not parallel, or apex of clypellus not extended beyond normal curve of lateral margins of genae. Apex of head seldom subconical 13

13. (12) Lateral margins of genae not sinuated below eyes (Pl. XXXII, figs. 3A, 3B); genae visible behind eyes in dorsal view (Pl.XXXII, fig. 3). Crown produced and angled; reflexed veinlets to costal margin of forewing always present (Pl. XXIX, fig. 1)............................*Scaphytopius,* p. 367

Lateral margins of genae usually sinuated below eyes; genae never visible behind eyes in dorsal view. Crown variable; reflexed veinlets to costal margin of forewing either present or absent......................... 14

14. (13) Forewing with numerous ramose lines and false veins.................... 28

Forewing without ramose lines and false veins........................ 15

15. (14) Forewing with two or more reflexed veinlets to the costal margin in the vicinity of the outer anteapical cell................................. 16

Forewing without reflexed veinlets to costal margin...................... 21

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* This is probably media separating from cubitus. See remarks, page 365.

16. (15) Crown of nearly uniform length, broad, and with a distinct transverse furrow just behind anterior margin. Broad, somewhat flattened species, *Bahita,* p. 379

Crown much longer medially than next eyes, or, if short, lacking the transverse furrow 17

17. (16) Crown flat, anterior margin carinate .... *Hecaloidia,* p. 378

Crown not flat, or if so, anterior margin not carinate 18

18. (17) Crown only slightly longer medially than next the eyes .... *Menosoma,* p. 379

Crown about twice as long medially as next the eyes 19

19. (18) Forewing with reflexed veinlets to costal margin much broadened; central anteapical cell very narrow distally (Pl. XXIX, fig. 3) .... *Scaphoidula,* p. 368

Reflex veinlets to costal margin of forewing not broadened; central anteapical cell not extremely narrow distally 20

20. (19) Outer anteapical cell of forewing less than half as long as central anteapical cell (Pl. XXIX, fig. 7). Crown not distinctly angled (Pl. XXXII, fig. 7) .... *Garapita,* p. 369

Outer anteapical cell of forewing over half as long as central anteapical cell and not so broad. Crown angled (Pl. XXXII, fig. 6) ...... *Osbornellus,* p. 369

21. (15) Crown produced, ocelli very large and situated as near to apex of head as to eyes (Pl. XXXII, fig. 8). Antennae as long as body ...... *Portanus,* p. 370

Crown either produced or not, but if produced, ocelli never as above. Antennae of various lengths 22

22. (21) Forewings not reaching beyond third abdominal segment .... *Faltala,* p. 385

Forewings reaching at least to ninth abdominal segment, usually extending beyond abdomen 23

23. (22) Forewing with only two closed anteapical cells 30

Forewing with three or more closed anteapical cells 24

24. (23) Crown extremely long and angled (Pl. XXXII, fig. 9), with a flat disk. Forewing narrowed apically from inner margin (Pl. XXIX, fig. 9) ... *Agudus,* p. 371

Crown not as above. Forewing with appendix longer and not narrowed from inner margin 25

25. (24) Outer anteapical cell of forewing divided into 3-5 smaller cells. Apex of forewing subtruncate (Pl. XXIX, fig. 6) .... *Kanorba,* p. 374

Outer anteapical cell of forewing not divided. Apex of forewing rounded .. 26

26. (25) Head narrower than thorax (Pl. XXXIII, fig. 1); apex turned slightly upward .... *Cumora,* p. 374

Head as wide or wider than thorax; apex seldom turned upward 27

27. (26) Broad, comparatively flat species. Pygofer with numerous, stout, closely set setae .... *Sanctanus,* p. 371

Not distinctly broad or flat species. Pygofer with setae usually rather sparse .... *Deltocephalus,* p. 373

28. (14) Ramose lines and false veins of forewing occurring only in area between radius and cubitus (Pl. XXIX, fig. 8) .... *Caphodus,* p. 375

Ramose lines and false veins of forewing not limited to area between radius and cubitus 29

29. (28) Head very short and broad; ocelli large, distant from eyes about three times their own diameter (Pl. XXXIII, figs. 5, 5A) .... *Baroma,* p. 377

Head not unusually broad; ocelli near eyes .... *Phlepsius,* p. 376

30. (23) Forewing without appendix, inner margin extended in a nearly straight line from tip of clavus to apex 31

Forewing with a distinct appendix, inner margin rounded from tip of clavus to apex 32

31. (30) Crown longer medially than next to eyes; head narrower than pronotum (Pl. XXXIV, fig. 5) .... *Acinopterus,* p. 388

Crown very short and of uniform length; head as wide as pronotum (Pl. XXXI, fig. 4) .... *Cariancha,* p. 360

32. (30) General form broad and flat; crown flat and short with anterior margin thin. Crown and pronotum transversely striated .... *Brincadorus,* p. 361

General form occasionally broad but not flat; crown with anterior margin not thin. Crown and pronotum not striated 33

33. (32) Forewing with only one claval vein, or with second claval vein very close to inner margin. Face very short, in profile swollen between antennae, *Onura,* p. 387

Forewing with two distinct claval veins. Face neither unusually short nor swollen between antennae 34

34. (33) Crown flat or nearly so, distinctly separated from the face by a subcarinate margin. Species slender 35

Crown not flat, or if so, very short and species robust. Crown not separated from face by a distinct margin 36

35. (34) Outer anteapical cell of forewing petiolate at least basally (Pl. XXVIII, fig. 8). Crown with two shallow, transverse furrows..........*Bolarga*, p. 366

Outer anteapical cell of forewing truncate basally (Pl. XXIX, fig. 4). Crown flat ....*Bonamus*, p. 365

36. (34) Crown over twice as long medially as next eyes (Pl. XXXIV, fig. 10). Ocelli small and distant from eyes..........*Benala*, p. 390

Crown not twice as long medially as next eyes. Ocelli either near eyes or unusually large 37

37. (36) Appendix extending around apex of forewing. Clypellus tapering distally (Pl. XXXIII, fig. 10A)..........*Exitianus*, p. 382

Appendix not extending around apex of forewing. Clypellus not as above, 38

38. (37) Crown sloping abruptly downward anteriorly; clypeus much swollen in profile (Pl. XXXIV, fig. 1A). First and second apical cells of forewing unusually large (Pl. XXX, fig. 1) ....*Eusceloidia*, p. 384

Crown not sloping downward abruptly; clypeus not swollen as above. Apical cells of forewing of more uniform size.......... 39

39. (38) Head distinctly wider than pronotum. Wedge-shaped leaf hoppers.......... 40

Head about as wide as pronotum or slightly narrower. Not wedge-shaped leaf hoppers 41

40. (39) Outer anteapical cell of forewing narrowed at both ends. Clypellus short and nearly parallel margined..........*Opsius*, p. 381

Outer anteapical cell of forewing not narrowed distally. Clypellus extending beyond genae but with apex rounded and basal portion constricted, *Alaca*, p. 386

41. (39) Frontal sutures extending past ocelli onto crown..........*Hegira*, p. 383

Frontal sutures terminating at ocelli 42

42. (41) Pronotum unusually large and humped in profile (Pl. XXXIV, fig. 3). Clypellus extended beyond genae..........*Brazosa*, p. 386

Pronotum not unusually large and not humped in profile. Clypellus not distinctly extended beyond genae.......... 43

43. (42) Crown comparatively flat and of nearly uniform length, never angular or subangular but always broadly rounded.......... 44

Crown rounded downward, disk not flat; length of crown variable, frequently longer or shorter medially than next the eyes.......... 45

44. (43) Outer anteapical cell of forewing broader distally than basally....*Bandara*, p. 380

Outer anteapical cell of forewing of nearly uniform width..........*Atanus*, p. 381

45. (43) Clypellus broad, scarcely or not at all constricted. Usually broad species, color green to brown..........*Chlorotettix*, p. 389

Clypellus narrow, usually distinctly constricted. Usually comparatively slender species, often with an angled vertex..........*Thamnotettix*, p. 388

46. (12) Forewing with three closed anteapical cells and no appendix...*Penestirellus*, p. 391

Forewing with two closed anteapical cells and usually a distinct appendix, *Stirellus*, p. 391

47. (11) Basal segment of hind tarsus with a distinct and deep groove in basal third ventrally. Slender, somewhat flattened species.......... 50

Basal segment of hind tarsus without a distinct and deep groove basally. Species not flattened 48

48. (47) Forewing without closed anteapical cells..........*Cortona*, p. 390

Forewing with one closed anteapical cell.......... 49

49. (48) Hind wing with four apical cells. Crown produced and angular or subangular ....*Baldulus*, p. 392

Hind wing with three apical cells. Crown not angular..........*Agelina*, p. 392

50. (47) Head wider than pronotum..........*Nesosteles*, p. 394

Head narrower than pronotum..........*Balclutha*, p. 393

51. (6) Sternal sclerites of mesothorax greatly enlarged, so that anterior coxa and trochanter reach only slightly beyond middle. Pronotum broadest near posterior margin. Appendix of forewing small or absent.......... 55

Sternal sclerites of mesothorax not enlarged. Pronotum broadest just behind eyes. Appendix extending around apex of forewing.......... 52

52. (51) Crown conical; median length over twice that next the eye..........*Conala*, p. 396

Crown not conical, but broad and short; median length not over one and one half times that next eye.......... 53

53. (52) Forewing with less than three closed anteapical cells.......... 54

Forewing with three closed anteapical cells (Pl. XXX, fig. 7)....*Idiotettix*, p. 395

54. (53) First cross vein of forewing absent (Pl. XXX, fig. 5). Basal portion of forewing coriaceous ....*Exolidia*, p. 395

First cross vein of forewing present. Wings hyaline..........*Neobala*, p. 396

55. (51) Hind wing with three apical cells. Crown distinctly produced anteriorly beyond eyes and distinctly longer medially than next eyes...... *Coelidiana*, p. 397
Hind wing with four apical cells. Crown produced anteriorly only slightly beyond eyes .... *Chinaia*, p. 397
56. (5) Anterior femora and tibiae broad and foliaceous................. *Gabrita*, p. 399
Anterior femora and tibiae neither broad nor foliaceous................. 57
57. (56) Tibiae of first two pairs of legs flattened........................ *Terulia*, p. 399
Tibiae of first two pairs of legs not flattened.................... *Jassus*, p. 398

DESCRIPTIONS OF JASSINE GENERA

Bythonia, new genus

(Pl. XXVIII, fig. 2; Pl. XXXI, fig. 1)

Intermediate in character between *Pachyopsis* Uhler and *Nionia* Ball, but differing from both in having the crown more distinctly separated from the face and in having the second apical cell of the hind wing very narrow. Easily separated from Nionia by the absence of circular punctures such as occur on the head, thorax, and forewings of the species of that genus.

Crown very short and broad, slightly shorter medially than next eyes. Face broad and short, ocellocular space with a distinct ledge above antennal socket. Pronotum broad, lateral margins distinctly carinate, surface transversely rugose. Forewing subcoriaceous, except extreme tip and appendix, which are membranous. Anteapical cells three in number; apical cells four; veins forming outer three apical cells practically parallel. Second cross vein joining media before base of the middle anteapical cell. Hind wing with second apical cell unusually narrow; costal cell distad of hamulus distinct and unusually large.

Type of the genus, *Nionia* (?) *rugosa* Osborn, 1923 (p. 32), a Bolivian species. No other species which could be referred to this genus are known to the writer.

Nionia Ball

(Pl. XXVIII, fig. 3; Pl. XXXI, fig. 2)

Nionia Ball, Proc. Biol. Soc. Wash., vol. 28, p. 165, 1915.

Correctly placed by Ball as a relative of *Tartessus* Stål, but even more closely related to *Thymbris* Kirkaldy and *Epipsychidion* Kirkaldy, with which it agrees in having an extremely short, broad, and curved crown, a strongly receding face, and no appendix on forewing. It differs from the above genera in being shorter and more robust and in having circular pits on the head, thorax, and at least the basal portion of the forewings. Not closely related to any American genus known to the writer.

Robust species, the known American forms all black in color, sometimes with apices of forewings reddish-brown. Head wider than thorax, eyes small, crown very short in its entire width, but usually slightly longer medially than at any other point. No distinct margin between crown and face. Ocelli distant from the eyes about four times their own diameter. Face rounded, clypellus unusually broad and tapering apically. Genae broad, lateral margins strongly sinuated. Ocellocular area produced into a distinct ledge over antennal socket. Pronotum long, but lateral margins very short and only weakly carinate. Scutellum small. Forewing coriaceous, circular pits arranged in rows along veins, anteapical cells three in number, the outer one often open distally. Hind wing with apical margin having a U-shaped excavation opposite the third and fourth apical cells, this excavation falling on the median line of the dorsum when the wing is folded in its normal position.

Type of the genus, *Goniagnathus palmeri* Van Duzee, 1891 (p. 171), a Nearctic species. The genus is known to be represented in South America by *Bythoscopus postica* Stål, 1860, and *Nionia major* Osborn, *N. gagatina* Osborn, with its variety *brunnea* Osborn, and *N. minor* Osborn, 1924. *Nionia* (?) *rugosa* Osborn, 1923, has been transferred to the genus *Bythonia*.

As pointed out by Kirkaldy, 1906 (p. 305 and 345), *Tartessus* Stål and its relatives are in many respects intermediate in character between typical Jassinae and typical Bythoscopinae. Nionia and Bythonia are the American representatives of this group, although Bythonia has less apparent affinities with Tartessus than has Nionia.

Xestocephalus Van Duzee

(Pl. XXVIII, figs. 4, 4A; Pl. XXXI, fig. 3)

Xestocephalus Van Duzee, Bull. Buffalo Soc. Nat. Sci., vol. 5, p. 214-215, 1894.

Related to *Acucephalus* Germar, with which it agrees in the position of the ocelli, the absence of an appendix on the forewing, and in having no submarginal vein at the apex of the hind wing. Differing from Acucephalus in that the head is narrower than the thorax and the outer anteapical cell of the forewing is small and much basad of its normal position. Kirkaldy placed Xestocephalus as a relative of *Phrynomorphus* Curtis, but the writer believes that it is properly placed near Acucephalus, as indicated in the original description by Van Duzee.

Crown produced and rounded to the front, median length distinctly greater than length next eyes. Eyes small. Ocelli distant from eyes about one third or one half the distance from eyes to apex of head. Face strongly receding, sometimes clypellus and lori somewhat flattened. Lateral margins of genae sinuated. Lateral margins of pronotum short, slightly diverging posteriorly, and carinate. Forewing hyaline; outer anteapical cell slender, usually lying along basal one half of central anteapical cell, but sometimes extending slightly farther distad; first apical cell small. Female pygofer armed with numerous large setae, ovipositor curved downward posteriorly. Male plates and pygofer armed with either spinelike or feathery setae or both.

Type of the genus, *Xestocephalus pulicarius* Van Duzee, 1894, a Nearctic species. The genus appears to be almost cosmopolitan in distribution, typical representatives being present on all continents of the world except Europe. The entire genus must be carefully worked before the specific status of some of the South American forms can be determined. Members of the genus recorded from South America are: *Deltocephalus superbus* Provancher, 1890, *Xestocephalus pulicarius* Van Duzee and *X. tessellatus* Van Duzee, 1894, *X. brunneus* Van Duzee, 1907, and *X. irroratus* Osborn, 1924.

Cariancha, new genus

(Pl. XXXI, fig. 4)

Short, broad leaf hoppers resembling *Goniagnathus* Fieber in general form but not closely related to any genus known to the writer. Distinguished by the extremely short, broad head with the crown rounded to the front, and the forewings without appendices.

Crown very short, about five times as broad as long. Ocelli distant from the eyes about three times their own diameter. Face short and broad; clypellus unusually narrow; lateral margins of genae sinuated below eyes. Pronotum as broad as head, about four times as long as crown, surface faintly and irregularly transversely striated, lateral margins very short and feebly carinate. Forewing tapered to bluntly pointed apex, closed anteapical cells two in number and of approximately equal size. Pygofer with numerous short, stout setae.

Type of the genus, *Cariancha cariboba,* n. sp., from Brazil.

Cariancha cariboba, new species

General color, shining reddish-brown. Crown pale, with an indefinite transverse band of brown to fuscous above ocelli; base of pronotum and scutellum usually with similarly colored areas. Forewing subhyaline, with small whitish spots in cells near apex.

Length of female, 6 mm.; width of pronotum, 2.25 mm. Crown of nearly uniform length throughout its width. Forewing with two or three extra veins to costal margin opposite outer anteapical cell; apex of outer anteapical cell close to costal margin.

Last ventral segment of female with posterior lateral angles rounded, posterior margin with a median V-shaped notch.

Holotype female and two female paratypes labeled "Rio," P. R. Uhler collection. No other data. Types in the collection of the United States Museum, Cat. No. 51662.

Brincadorus, new genus

(Pl. XXXI, fig. 5)

Related to *Stroggylocephalus* Flor, which it resembles in general form and shape of the broad, short crown, but differing from that genus and from *Acucephalus* Germar in that the forewing has a distinct and membranous appendix and the hind wing has a distinct submarginal vein apically.

Crown broadly rounded anteriorly, anterior portion and thin anterior margin with numerous fine, transverse striae. Ocelli distant from eyes about two and one half times their own diameter. Face short and relatively flat, clypellus unusually short and broad, lateral margins of genae sinuated below eyes. Pronotum broad, surface of posterior portion with fine transverse striae. Forewing short and broad, closed anteapical cells two in number.

Type of the genus, *Brincadorus laticeps,* n. sp., from Brazil and Bolivia. So far as known, this is the only species belonging to this genus.

Brincadorus laticeps, new species

General ground color yellowish-white. Crown with an indefinite transverse band of reddish-brown; thorax, forewing, except tip, and dorsum of abdomen washed with the same color.

Length of male, 5.75–6 mm. A broad, flat species. Clypellus swollen, distinctly curved in profile. Posterior margin of pronotum shallowly and angularly excavated; scutellum large.

Male valve large, apex bluntly rounded or subtruncate. Plates extending upward and backward around the posterior ventral angle of the pygofer and tapering to sharp, spinelike apices which converge behind the pygofer. Aedeagus visible, extending downward and backward from near the apex of the valve.

Holotype male and 1 male paratype, Chapada, Brazil, January, C. F. Baker collection. Also 1 male paratype labeled Rurrenabaque, Beni, Bolivia, W. M. Mann, December, 1921, Mulford Biological Exploration, 1921-'22. Types in the collection of the United States National Museum, Cat. No. 51663.

Cerrillus, new genus

(Pl. XXXI, fig. 6)

Related to *Hecalus* Stål by the flat crown with a thin margin, but differing from that genus in having the head, pronotum, and scutellum finely rugose rather than granulose and in having the ocelli about half way between the eyes and the apex of the head rather than next the eyes. No obvious sexual dimorphism.

Crown over twice as long medially as next the eyes, apex subangular. Lateral margins of genae sinuated. Pronotum short and broad, lateral margins carinate and slightly diverging posteriorly, posterior margin broadly, shallowly, and angularly excavated. Forewing short, but exceeding abdomen, appendix distinct, closed anteapical cells two in number.

Type of the genus, *Hecalus notatus* Osborn, 1923 (p. 27), known to occur in Brazil and Bolivia. This is the only species at present included in the genus.

Arrugada, new genus

(Pl. XXVIII, fig. 5; Pl. XXXI, fig. 7)

Apparently related to *Huleria* Ball by the venation and angulate head, but differing from that genus in the character of the head and anterior half of the pronotum, which are coarsely and irregularly rugose, and in having the numerous setae on the ventral surface of the basal segment of the hind tarsus not arranged in the normal two rows but distributed over most of the ventral surface.

Crown about twice as long medially as next the eyes, apex slightly turned upward; margin between crown and front distinctly carinate or subfoliaceous. Ocelli distant from the eyes about three times their own diameter. Lateral margins of genae incised below the eyes, below incision broadly rounded to apex of clypellus; genae comparatively broad next clypellus. Antennae mounted on a short tubercle which resembles a basal antennal segment. Pronotum large, lateral margins unusually long and distinctly carinate, disk and posterior half faintly, transversely rugose. Forewing subcoriaceous, long and comparatively slender, with a distinct appendix and normally with two closed anteapical and four apical cells. Venation of hind wing normal.

Type of the genus, *Huleria rugosa* Osborn, 1924 (p. 404), a Bolivian species. The genus will also include *Huleria affinis* Osborn, 1924, from the same region.

Luheria Osborn

(Pl. XXVIII, fig. 9; Pl. XXXI, fig. 8)

Luheria Osborn, Ann. Carn. Mus., vol. 15, no. 1, p. 31, 1923.

Resembling *Selenocephalus* Germar in the shape of the short, broad crown, but differing from that genus in having the outer anteapical cell of forewing roughly triangular and the central anteapical cell constricted near distal end. In the opinion of the writer this genus is not closely related to *Huleria* Ball, near which it was placed by Osborn, since *Huleria* has an elongate and subfoliaceous crown, the ocelli are distant from the eyes, and the anteapical cells of the forewing are slender and parallel-sided.

Crown but little longer medially than next the eyes, anterior margin broadly and evenly rounded, with a few faint transverse striae. Ocelli distant from eyes slightly more than twice their own diameter. Face broad, clypellus constricted near base, lateral margins of genae evenly curved except for a faint sinuation below each eye. Pronotum broad and nearly flat, lateral margins faintly carinate. Forewing broad, scarcely tapered distally, lacking a distinct appendix, claval veins connected by one or two cross veins, apical cells very short.

Type of the genus, *Luheria constricta* Osborn, 1923, described from Brazilian specimens and now known to occur also in northern Argentina. No other species belonging to the genus are known to the writer.

Egenus, new genus

(Pl. XXVIII, fig. 6; Pl. XXXI, fig. 10)

Most closely related to *Parabolocratus* Fieber, with which it agrees in having two elongate anteapical cells in the forewing, but differing from that genus in that the forewing is acuminate and the front is swollen. Differing from *Dorycephalus* Kuschakewitch, with which it agrees in the form of the forewing, in having the crown much shorter and the margin not foliaceous, and in the structure of the pronotum.

Crown produced and broadly rounded anteriorly, the anterior margin thin and turned upward, leaving a semicircular concave area anterior to the ocelli. Ocelli about one and one half times their diameter from the eyes. Clypeus strongly convexly rounded between antennae when seen in profile. Pronotum short, lateral margins short and carinate, carina curved slightly upward posteriorly in lateral view. Forewing long, appendix absent, apical and anteapical cells slender. Ovipositor sheath not extending beyond the short pygofer.

Type of the genus, *Egenus acuminatus*, n. sp., from Argentina. This is the only species included in the genus at present.

Egenus acuminatus, new species

A large, pale-yellow species without definite markings but probably green in life, as are most species of *Parabolocratus*.

Length of female, 8.5 mm. Crown slightly wider than long, median length over twice that next the eye and equal to median length of pronotum. Pronotum broad, but slightly narrower than head, posterior portion with shallow transverse rugae. Costal margin of forewing but slightly curved; forewing tapered beyond clavus about equally from each margin.

Last ventral segment of female distinctly longer than preceding segment, posterior margin with a faintly incised median lobe, lateral angles rounded. Pygofer short, but extending slightly beyond ovipositor sheath.

Holotype female from Loreto, Prov. Missiones, Argentina, Dec. 14, 1931, A. A. Ogloblin. Type in collection of the United States National Museum, Cat. No. 51664.

Spangbergiella Signoret

(Pl. XXVIII, fig. 7; Pl. XXXII, figs. 1, 1A)

Spangbergiella Signoret, Ann. Ent. Soc. France, ser. 5, vol. 9, pp. 273-274, 1879.
Bergiella Baker, Can. Ent., vol., 29, pp. 157-158, 1897. (New synonymy.)

Elongate, somewhat flattened leaf hoppers; the crown distinctly produced medially and the margin always foliaceous in the females and frequently so in the males; the pronotum broad and short, with lateral margins long and distinctly carinate.

Crown extremely variable in length, always twice, usually several times as long medially as next eyes; margin of crown varying from foliaceous to bluntly rounded; disk of crown usually flat or slightly convex. Ocelli on narrow margin of crown, next to or near eyes. Pronotum with lateral margins nearly straight, either nearly parallel or slightly diverging posteriorly from eyes. Forewing long and rather slender, appendix very narrow, usually not distinctly membranous; claval veins usually one, but occasionally two, in number; first cross vein rarely present and then very short; usually entirely absent and the media joining cubitus for a short distance; one anteapical cell present, the base of this pointed. Ovipositor sheath extending beyond pygofer.

Type of the genus, *Glossocratus vulneratus* Uhler, 1877 (p. 464), a North American species. The genus occurs only in America so far as known. South American species referred to the genus include *Spangbergiella lacerdae* Signoret, 1879, *Hecalus lynchii* Berg, 1879, *Spangbergiella punctato-guttata* Berg and *S. felix* Berg, 1884, and *Parabolocratus uruguayensis* Berg, 1884. The writer has been unable to examine either types or authentically determined specimens of *P. uruguayensis* Berg, upon which Baker based his genus Bergiella, but finds nothing in either Berg's or Baker's characterizations which would seem to justify separating Bergiella from Spangbergiella. The status of lynchii is in doubt, having been placed as a synonym of *vulnerata* Uhler by Signoret, 1880, Berg, 1884, and Ball, 1899; however, since Signoret's figures of *S. lacerdae*, August, 1879, from Bahia, Brazil, scarcely agree with *vulnerata* Uhler, it seems more probable that *lacerdae* Signoret is a distinct species and has as a synonym *lynchii* Berg, December, 1879.

Lawson, 1932 (p. 116), has characterized Spangbergiella as having ". . . inner branch of first sector (of forewing) forking well cephalad on disc of corium, radius three-branched resulting in five apical cells . . .," an interpretation of the venation which the writer believes unwarranted, since specimens are occasionally found in which the venation at the base is of the normal type except that the cross vein is extremely short. The writer's interpretation of the venation is given in the description of the genus.

Bonamus, new genus

(Pl. XXIX, fig. 4; Pl. XXXI, fig. 9)

Related to *Spangbergiella* Signoret, but with crown margin never foliaceous and forewing with a distinct appendix and two anteapical cells.

Crown nearly flat, distinctly longer medially than next the eyes, not angled anteriorly, anterior margin not thin or foliaceous. Face rather flat, lateral margins of genae strongly sinuated below eyes. Pronotum short, lateral margins short and only weakly carinate. Forewing long and slender, anteapical cells lying about parallel to claval suture, the outer cell shorter than the central one. Ovipositor sheath long, extending beyond slender pygofer for about one third its total length. Genital segments of both sexes with numerous large setae.

Type of the genus, *Bonamus lineatus,* n. sp., from Argentina. A second species, from the same locality and apparently undescribed, will also be included in the genus.

Bonamus lineatus, new species

A pale blue-green to yellowish-white species with narrow dorsal, longitudinal lines of orange-red. Crown usually whitish, sometimes suffused with blue-green, with three parallel stripes, one next each eye and one in the middle, these continued across pronotum and scutellum. Pronotum with an additional pair of stripes, one behind each eye, these continued across middle of clavus of each forewing and meeting on commissural line. Forewing subhyaline, suffused with blue-green to yellowish-white, marked with orange-red along commissural line, across middle of clavus, along outer margin of claval suture, and in cells of corium basad of apical cross veins, these markings less distinct than the dorsal ones.

Length, 5–6 mm. Crown as long as basal width, median length over twice that next eye and equal to median length of pronotum. Pronotum slightly narrower than head, posterior margin broadly and shallowly excavated. General form, slender.

Male valve elongate and triangular, plates together somewhat spoon-shaped, ventral surfaces covered with long setae. Last ventral segment of female long, median portion broadly notched about half way to base of segment, with a blunt toothlike projection at base of notch. Pygofer and distal third of ovipositor sheath with numerous long setae.

Holotype male, allotype female, and 3 male and 10 female paratypes from Loreto, Prov. Missiones, Argentine, collected by A. A. Ogloblin in 1931, the holotype on December 6, the allotype on December 1, and the paratypes on various dates from November 27 to December 14. Types in collection of the United States National Museum, Cat. No. 51665.

Bolarga, new genus

(Pl. XXVIII, fig. 8; Pl. XXXII, fig. 2)

Resembling *Laevicephalus* De Long in general appearance, but apparently not closely related to the Deltocephalus group. Similar to *Osbornellus* Ball in the shape of the anteapical cells of the forewing, but lacking the reflexed veinlets to the costal margin.

Crown produced and subangular, disk with two broad, shallow, transverse furrows, one between the eyes and the other just in front of the ocelli. Margin between crown and face subcarinate. Ocelli near eyes. Face comparatively flat; genae broad and lateral margins broadly notched below the eyes. Pronotum short, lateral margins not carinate. Forewing with a distinct appendix, second cross vein absent, outer anteapical cell broader distally, central anteapical cell strongly constricted near apex, fourth apical cell unusually small, costal area with a cross vein to costal margin at each end of outer anteapical cell. Pygofer with numerous stout setae which are arranged in rather definite groups.

Type of the genus, *Parabolocratus bolivianus* Osborn, 1923 (p. 32), from Bolivia. An apparently undescribed species from nothern Argentina also belongs here. The writer considers *bolivianus* variety *pallida* Osborn, 1923, unworthy of varietal rank and places it as a synonym of bolivianus. (New synonymy.)

Bolarga is not closely related to Parabolocratus, where its type species was placed by Osborn, and is easily separated from that genus by the shape of the cells of the forewing.

Scaphytopius Ball

(Pl. XXIX, fig. 1; Pl. XXXII, figs. 3, 3A, 3B)

Scaphytopius Ball, Can. Ent., vol. 63, p. 218, 1931.

Easily separated from other genera of the Jassinae by the flat crown, broad genae which extend up behind the eyes and are visible from above, and the reflexed veinlets in the costal area.

Crown produced and angled, disk flat; margin between crown and face distinct, often carinate. Ocelli near eyes. Front very narrow and elongate, distinctly constricted just beyond base of clypellus. Genae broad, lateral margins not sinuated. Pronotum short, slightly wider than head; lateral margins short, diverging posteriorly and subcarinate. Forewing with a distinct appendix, numerous reflexed veinlets to the costal margin opposite outer anteapical and outer discal cells, and usually three, but sometimes only two, closed anteapical cells.

Type of the genus, *Platymetopius elegans* Van Duzee, 1890 (p. 94), a Nearctic species. The genus is known to occur only in the Nearctic and Neotropical regions. In addition to the species referred to Scaphytopius by Ball, 1932 (p. 252), the genus as above defined will include the species placed in *Deltopinus* Ball (type, *Platymetopius nigriviridis* Ball, 1909), *Cloanthus* Ball (type, *Platy-*

metopius angustatus Osborn, 1905), *Platymoideus* Ball (type, *Platymetopius trilineatus* Ball, 1916), *Nasutoideus* Ball (type, *Playtmetopius nasutus* Van Duzee, 1907), and *Convelinus* Ball (type, *Platymetopius nigricollis* Ball, 1916), those groups being here considered as subgenera of Scaphytopius. In making a phylogenetic arrangement of the species the writer has found these segregates very useful, but is of the opinion that the differences in markings and the sexual dimorphism exhibited by certain groups are an insufficient basis for the establishment of genera. These groups are separated in a key by Ball, 1931 (p. 217).

Species of Scaphytopius recorded from South America are: *Jassus* (*Deltocephalus*) *marginelineatus* Stål, 1858; *Jassus* (*Deltocephalus*) *anticus* Stål, 1860; *Platymetopius loricatus* Van Duzee, 1894; *Platymetopius fuliginosus* Osborn and *P. sulphureus* Osborn, 1923; and *Scaphytopius bolivianus* (new name for *Platymetopius lineolatus* Osborn, 1923, not *Platymetopius lineolatus* Motschulsky, 1859).

Scaphoidula Osborn

(Pl. XXIX, fig. 3; Pl. XXXII, fig. 4)

Scaphoidula Osborn, Ann. Carn. Mus., vol. 15, no. 1, p. 41, 1923.

Related to *Scaphoideus* Uhler by the shape of the outer anteapical cell of the forewing, but with the crown margin more rounded, the reflexed veinlets to costal margin of forewing much broadened and not situated anterior to base of outer anteapical cell, and with the large setae near the tip of the pygofer not arranged in groups as is typical of Scaphoideus.

Crown about twice as long medially as next the eye, apex bluntly angled, disk convex, margin between crown and face rounded. Head about as wide as pronotum. Ocelli comparatively large and situated next the eyes. Lateral margins of genae sinuately curved, genae very narrow next clypeus. Pronotum longer than vertex, lateral margins short and faintly carinate, posterior margin broadly and shallowly excavated between basal angles of scutellum. Forewing slender, with a distinct appendix and two closed anteapical cells, the outer about half as long as the second and not lying parallel to costal margin, the second narrowed apically. Antenna about half as long as forewing.

Type of the genus, *Scaphoidula cingulata* Osborn, 1923, a Neotropical species. Three closely related species from Central America and northern South America are also referred to this genus.

Osbornellus Ball

(Pl. XXXII, fig. 6)

Osbornellus Ball, Jl. Wash. Acad. Sci., vol. 22, no. 1, p. 17, 1932.

Closely related to *Scaphoidula* Osborn by the reflexed veinlets to the costal margin and the shorter outer anteapical cell of the forewing, but differing from that genus in that the outer anteapical cell of the forewing lies nearly parallel to the costal margin and the reflexed veinlets to the costal margin are not broadened.

Head and thorax as in Scaphoidula; head often slightly narrower than pronotum. Second anteapical cell of forewing not narrowed apically, costal area occasionally with a reflexed veinlet anterior to base of outer anteapical cell.

Type of the genus, *Scaphoideus auronitens* Provancher, 1889 (p. 277), a Nearctic species. South American species belonging to the genus are *Scaphoideus hyalinus* Osborn, *S. affinis* Osborn, *S. fulvomaculatus* Osborn, and *S. mexicanus* Osborn. Ball, 1932, placed *mexicanus* Osborn as a doubtful synonym of *Portanus stigmosus* (Uhler), but the cotype of mexicanus in the United States National Museum collection is an Osbornellus closely related to *consors* Uhler. A specimen identical specifically with this cotype was sent to Mr. J. N. Knull, curator of insects at Ohio State University, who kindly compared it with the three cotypes in the collection there and reported it to be the same. It appears, therefore, that mexicanus is properly placed in the genus Osbornellus.

Garapita, new genus

(Pl. XXIX, fig. 7; Pl. XXXII, fig. 7)

Related to *Scaphoidula* Osborn and *Osbornellus* Ball in having a shorter outer anteapical cell and reflexed veinlets in the costal area of the forewing, but differing from those genera in that the outer anteapical cell is even smaller, the crown is shorter and less angled, and the head is distinctly wider than the pronotum.

Crown relatively flat, margin between crown and face rounded, median length about twice that next the eyes. Ocelli near eyes. Clypellus unusually broad and convex; genae narrow, lateral margins sinuated below the eyes. Lateral margins of pronotum short, not distinctly carinate. Forewing long and slender, appendix distinct, closed anteapical cells two in number, the outer petiolate and distinctly less than half as long as the central cell, the latter not so narrow distally as in Scaphoidula, reflexed veinlets to costal margin usually three in number and situated in vicinity of outer anteapical cell. Pygofer with numerous stout setae.

Type of the genus, *Garapita garbosa*, n. sp., from northern Argentina. A closely related species from the same locality also belongs here.

Garapita garbosa, new species

Body below yellow except for fuscous marks on abdomen; above black with longitudinal stripes of yellow. Crown marked with yellow as follows: Narrow anterior margin, three small spots on disk marking corners of a triangle with the apex anterior, and a dash near each ocellus, all these spots frequently minute or absent in the male, and a small, triangular basal area which is the beginning of a broad median stripe across pronotum and scutellum. Forewing black to fuscous except for narrow yellow marks along commissural line, claval veins, claval suture, and media, and the hyaline costal area and inner apical cell, the hyaline costal area being opposite the anteapical cells and interrupted by the black veinlets to costal margin.

Length, 4.25–5 mm. Crown bluntly angled in female, less produced in male. Pronotum longer than crown, posterior margin broadly and shallowly concave. Forewing broad apically, apical cells unusually large.

Male valve small and triangular, plates slender and elongate, tapering rather gradually to the somewhat acuminate tips. Last ventral segment of female much longer than preceding segment, posterior margin truncate or slightly produced medially, subcarinate medially on posterior third.

Holotype male, allotype female, and 4 male and 6 female paratypes from Loreto, Prov. Missiones, Argentina, collected in 1931 by A. A. Ogloblin. The holotype was taken on December 10, the allotype on December 14, and the paratypes on various dates from November 29 to December 18. Types in the collection of the United States National Museum, Cat. No. 51666.

Portanus Ball

(Pl. XXXII, fig. 8)

Portanus Ball, Jour. Wash. Acad. Sci., vol. 22, no. 1, p. 18, 1932.

Resembling *Osbornellus* Ball in general form, but differing in that the ocelli are larger and distant from the eyes, the antennae are longer, and the two anteapical cells of the forewing are of nearly equal size.

Crown about twice as long medially as next the eye, apex rounded, not angled as in Osbornellus. Margin between crown and face rounded. Ocelli unusually large, situated on anterior margin of crown at about midpoint between eyes and apex of head. Antenna as long as or longer than wings, basal segments large; antennal socket unusually deep. Forewing with two closed anteapical cells which are nearly parallel-sided and of about equal length, veinlets to costal margin not reflexed; a distinct appendix absent, and with the veins usually intermittently marked with white.

Type of the genus, *Scaphoideus stigmosus* Uhler, 1895 (p. 77), a West Indian species. South American species referable to the genus are *Scaphoideus boliviensis* Baker (*S. bicolor* Osborn, 1923, nec *S. bicolor* Ball, 1909), *S. hasemani* Baker (*S. punctulatus* Osborn, 1923, nec *S. punctulatus* Melichar, 1903), and *S. longicornis* Osborn.

Sanctanus Ball

(Pl. XXIX, fig. 2; Pl. XXXII, fig. 5)

Sanctanus Ball, Jour. Wash. Acad. Sci., vol. 22, no. 1, p. 10, 1932.

Related to *Amplicephalus* DeLong by the structure of the head, but differing from that genus in that the second cross vein of the forewing is always present, the second anteapical cell is always constricted and divided, and there is usually a slightly reflexed vein to the costal margin from near the base of the outer anteapical cell.

Crown relatively flat, anterior margin usually produced and angled medially, sometimes only slightly longer medially than next eyes, median length nearly equal to or less than median length of pronotum. Ocelli near eyes. Front relatively slender; lateral margins of genae sinuated below eyes. Lateral margins of pronotum very short. Forewing relatively large, frequently with extra short veins in clavus and anteapical cells; appendix distinct, reaching to apex of forewing. Pygofer with numerous large setae, sometimes arranged in rather indefinite groups, never in compact groups as in *Scaphoideus* Uhler.

Type of the genus, *Jassus sanctus* Say, 1831 (p. 307), a Nearctic species. Representatives of the genus known to occur in South America are *Scaphoideus fasciatus* Osborn, 1900, *Jassus* (*Deltocephalus*) *ornatipennis* Stål, 1858, and *Jassus* (*Deltocephalus*) *lepidellus* Stål, 1860.

Agudus, new genus

(Pl. XXIX, fig. 9; Pl. XXXII, fig. 9)

Resembling *Platymetopius* Burmeister (*sensus strictus*) in that the crown is long and angled, but more closely related to certain species now referred to *Sanctanus* Ball in the characters of the venation. Differing from *Platymetopius* and *Sanctanus* in having the crown distinctly longer than pronotum and flat on the disk.

Crown produced and angled, anterior margin not carinate except near apex. Face convex, clypellus unusually broad, lateral margins very short. Forewing long and slender, tip curved away from abdomen, appendix small; inner margin of forewing tapering to apex more sharply than outer margin, closed anteapical cells normally three in number, the central one much larger than either the inner or the outer. Pygofer of both sexes armed with numerous long setae.

Type of the genus, *Agudus typicus,* n. sp., from Argentina. Four other species, represented by specimens from northern Argentina and Paraguay, also belong to this genus. One of these species is undoubtedly *Platymetopius longiceps* Berg, 1879, as the specimens fit his description exactly except that they are not "densissime punctulatus" and do not have the face "distincte punctato," but are finely granulose.

Agudus typicus, new species

General ground color pale yellowish-white. Crown washed with smoky-brown except for a narrow median line from apex to median suture, and irregular lines on crown margin anterior to ocelli; the pale lines margined with fuscous, especially at apex of crown and outer margins of parallel basal stripes. Face washed with brownish-fuscous except for a narrow and frequently interrupted median line, six or seven narrow transverse lines which do not reach median line, and a broad stripe just below crown margin. Pronotum with seven faint brown longitudinal stripes, deflexed lateral margins marked with contrasting fuscous-brown and yellow. Scutellum unevenly washed with yellowish-brown. Forewing with costal margin on basal half bright yellowish-white, remainder subhyaline; veins pale, faintly margined with fuscous; cells faintly embrowned, with four fuscous spots, one on clavus near claval suture, one at base of inner discal cell, one at base of central anteapical, and one along inner margin of inner anteapical cell.

Length of female, 5.25 mm. Ratio of median length of crown to median length of pronotum, 2½ to 1½; ratio of length of crown to shortest interocular space, 2½ to 1½. Lateral margins of crown nearly straight, curved slightly at apex.

Last ventral segment of female with a longitudinal median carina, posterior margin broadly, concavely excavated.

Holotype female and 2 female paratypes from Loreto, Prov. Misiones, Argentina, collected in 1931 by A. A. Ogloblin, the holotype on December 1, the paratypes on December 6. Types in the collection of the United States National Museum, Cat. No. 51667.

Deltocephalus Burmeister

Deltocephalus Burmeister, Genera Ins., vol. 1, pl. 14, 1838.

Small, frequently short leaf hoppers, grass-feeding so far as known. Forewing usually with three anteapical cells.

Crown produced and frequently angled, frequently flat and with a distinct margin anteriorly, but never separated from the face by a carina. Ocelli next eyes. Lateral margins of genae sinuated. Forewing either long or short.

Type of the genus, *Cicada pulicaria* Fallén, 1826 (p. 34), a Palearctic species now known to occur in the Nearctic region also. The genus as here defined is world wide in distribution and contains a great diversity of forms, many groups of which have been segregated as subgenera. The South American species are too numerous to review here.

The typical forms of the genus may be separated from the other two South American subgenera by the following key:

1. Crown distinctly angled. Species unusually long and slender..........*Haldorus,*
Crown produced but not distinctly angled. Species not unusually slender.... 2
2. (1) Width of crown greatly exceeding median length. Large species...*Amplicephalus,*
Width of crown about equal to median length. Smaller species...*Deltocephalus,*

Deltocephalus subgenus *Amplicephalus* De Long

Deltocephalus subgenus *Amplicephalus* De Long, Ohio State University Studies, vol. 2, p. 83, 1926.

The characters for the separation of this subgenus are indicated in the key.

Type of the subgenus, *Deltocephalus osborni* Van Duzee, 1892c (p. 304), a North American species.

Deltocephalus subgenus *Haldorus,* new subgenus

Differing from the typical *Deltocephalus* in being more elongate, slender, with a flat crown and pointed head. Forewing with central anteapical cell nearly always constricted and divided.

Type of the subgenus, *Thamnotettix venatus* Osborn, 1924, a South American species. The subgenus will also include about twenty-five closely related South American species, most of them apparently undescribed.

Cumora, new genus

(Pl. XXXIII, fig. 1)

Related to the *Deltocephalus* group, with which it agrees in venation, but differs in having the crown more angular and turned upward apically.

Crown about twice as long medially as next the eyes, anterior margin not carinate, but crown distinctly separated from face. Ocelli next eyes. Face relatively flat, lateral margins of genae broadly sinuated. Head slightly narrower than pronotum. Pronotum short, lateral margins not carinate. Forewing long and slender, appendix distinct, central anteapical cell constricted and divided.

Type of the genus, *Cumora angulata*, n. sp., from northern Argentina. A second species from the same locality is also referred to this genus.

Cumora angulata, new species

Face fuscous with numerous pale areas. Ground color of dorsal regions tawny. Anterior margin of crown with four small fuscous spots, pronotum with four longitudinal reddish stripes, and veins of forewing milky-white.

Length, 5 mm. Clavus with veins usually connected.

Male valve comparatively large; plates small and tapered to blunt tips. Last ventral segment of female short, with a single median tooth on posterior margin.

Holotype male, allotype female, and 4 female paratypes from Loreto, Prov. Missiones, Argentina, collected in 1931 by A. A. Ogloblin, the holotype on December 10, the allotype on November 27, and the paratypes on various dates from December 1 to December 18. Types in the collection of the United States National Museum, Cat. No. 51668.

Kanorba, new genus

(Pl. XXIX, fig. 6; Pl. XXXIII, fig. 2)

Resembling *Scaphoideus* Uhler in general appearance, but with disk of crown concavely excavated, outer anteapical cell of forewing divided into several small cells, and with reflexed veinlets to costal margin opposite outer discal cell of forewing.

Crown produced and angled, margin between crown and face distinct but not carinate. Ocelli near the eyes. Face broad and comparatively flat; clypellus broad distally, constricted just beyond base; genae broad, lateral margins slightly sinuated. Pronotum short, lateral margins not carinate. Forewing broad, subtruncate apically, appendix distinct, claval veins connected by a cross vein, second cross vein present, costal area with two reflexed veinlets to costal margin opposite outer anteapical cell and three or four opposite the outer discal cell. Pygofer with numerous stout setae.

Type of the genus, *Kanorba reflexa,* n. sp. No other species are referred to the genus.

Kanorba reflexa, new species

General ground color creamy-white. Face washed with pale brown. Crown with an irregular brown area on the disk with extensions to the anterior margin next the ocelli and median line. Pronotum with four broad, indefinite, longitudinal brown stripes; scutellum with brown areas basally. Forewing subhyaline brown with numerous hyaline areas; tip and reflexed veinlets to costal margin fuscous.

Length, 5–5.25 mm. Crown with apex slightly turned upward, other structures as given for the genus.

Male valve short and triangular. Plates together broad basally and tapered to pointed tips, the two plates not touching at any point along median line. Last ventral segment of female with a faint median notch on truncate posterior margin.

Holotype male, allotype female, and 1 female paratype from Corumba, Brazil, C. F. Baker collection, the holotype and allotype labeled "March" and the paratype "May." Types in the collection of the United States National Museum, Cat. No. 51669.

Caphodus, new genus

(Pl. XXIX, fig. 8; Pl. XXXIII, fig. 4)

Resembling *Osbornellus* Ball in general habitus, and related to that genus in the structure of the head, but allied to *Phlepsius* Fieber by the presence of ramose lines and false veins in the forewings. Differing from *Osbornellus* by the presence of the false veins and from *Phlepsius* by the shape of the anteapical cells.

Crown produced and angled as in *Scaphoidula* Osborn, the margin between the crown and face distinct but not angled. Ocelli near eyes. Face and pronotum as in *Scaphoidula.* Forewing with a distinct appendix, outer anteapical cell broader distally and with a reflexed veinlet to costal margin from each end, central anteapical cell narrowed medially. Second cross vein usually absent, ramose lines and false veins restricted to area between radius and cubitus. Pygofer with numerous large setae.

Type of the genus, *Caphodus maculatus,* n. sp. The genus will also contain *Scaphoideus obliquus* Osborn, 1923, from Brazil.

Caphodus maculatus, new species

Closely related to *obliquus* Osborn, differing in being slightly smaller, having a less flattened crown, shorter and more tapered male plates, and with the posterior margin of the last ventral segment of the female excavated instead of produced.

General ground color yellowish-white. Crown with four small fuscous spots on anterior margin and a pair of large orange-red spots on the disk. Face fuscous, interrupted on clypeus with numerous short, transverse, pale marks. Pronotum with a pair of orange-red spots basally and four faint orange spots on disk, the latter somewhat elongate and resembling traces of longitudinal vittae. Scutellum with indefinite orange marks basally. Forewing with a distinct fuscous spot on clavus next claval suture, smoky brown coloration on most of clavus except three opalescent dashes next commissural line, a fuscous spot on corium between media and cubitus anterior to base of central anteapical cell, and another fuscous area at apex of central anteapical cell following outer apical vein to wing margin. Veins and false veins mostly brown to fuscous, the two reflexed veinlets to costal margin black.

Length, 5.25–5.75 mm. Structurally this species is identical with obliquus except for the proportionally smaller size.

Male valve broad basally, triangular in shape. Plates broad basally, but tapering gradually to pointed tips, margins with a row of large setae and above these a row of fine hairlike setae. Last ventral segment of female long, with a median carina which ends in a blunt median tooth on posterior margin; posterior margin broadly excavated and with a caudal projection at each side which curves slightly toward the median line.

Holotype male, allotype female, and 10 male and 2 female paratypes from Loreto, Prov. Missiones, Argentina, collected in 1931 by A. A. Ogloblin, the type on December 18, the allotype on December 8, and the paratypes on various dates from November 25 to December 18. Types in the collection of the United States National Museum, Cat. No. 51670.

Phlepsius Fieber

Phlepsius Fieber, Verh. Zoöl.-Bot. Ges. Wien, vol. 16, p. 503, 1866.

Relatively large, frequently robust species, with numerous ramose lines and false veins in the forewings. Color usually some shade of brown or near brown.

Crown of varying lengths and shapes, either margined or rounded to the front. Face usually broad, lateral margins of genae sinuated. Lateral margins of pronotum not at all or only feebly carinate. Forewing broad, appendix distinct, closed anteapical cells either two or three in number. Costal area frequently with reflexed veinlets to costal margin in South American species.

Type of the genus, *Jassus intricatus* Herrich-Schaeffer, 1838, a Palearctic species. South American species referred to the genus include *Phlepsius lacerdae* Signoret, 1879; *Phlepsius gracilis* Osborn, *hasemani* Osborn, *saranensis* Osborn, *sparsus* Osborn, *loricatus* Osborn, *annulatus* Osborn, *clypeatus* Osborn, and *signatus* Osborn, 1923; and *Eutettix punctatus* Osborn, 1923.

The genus as here defined contains a great diversity of forms, and careful study of all of the species of the group is needed to decide the status of the following segregates which have been established in the North American fauna and are at present considered as subgenera: *Paraphlepsius* Baker, type *Paraphlepsius ramosus* Baker, 1897; *Iowanus* Ball, type *Phlepsius* (*Iowanus*) *handlirschi* Ball, 1918; *Texananus* Ball, type *Phlepsius* (*Texananus*) *mexicanus* Ball, 1918; *Dixianus* Ball, type *Phlepsius utahnus* Ball, 1909; *Zioninus* Ball, type *Phlepsius extremus* Ball, 1901; and *Pendarus* Ball, type *Phlepsius slossoni* Ball, 1905.

Baroma, new genus

(Pl. XXXIII, figs. 5, 5A)

Resembling *Idiotettix* Osborn in the shape of the short, broad head and elongate form, but differing from that genus in having no ledge above the antennal socket, and in the small size of the appendix of the forewing. More closely related to *Phlepsius* Fieber, with which it agrees in having numerous ramose lines and incomplete cross veins in the forewing, but differing from Phlepsius by the extremely short, broad head. Differing from *Remadosus* Osborn and Ball in the shape of the facial sclerites and in the structure of the forewing.

Head broader than pronotum; crown about seven times as broad as long, broadly curved anteriorly, of uniform length and rounded to the face. Ocelli large, distant from the eyes about three times their own diameter. Face nearly flat, front strongly constricted at base of clypellus; genae broad, lateral margins broadly rounded from below eyes. Pronotum broad and rather short, disk faintly, transversely striated, lateral margins short and faintly carinate. Scutellum unusually large. Forewing long, venation irregular, but with three closed anteapical cells and several extra cross veins to costal margin; appendix distinct, but not extending around apex of wing as in Idiotettix. Pygofer short and broad, without large setae.

Type of the genus, *Baroma reticulata*, n. sp., from northern Argentina. This is the only species belonging to the genus known to the writer.

Baroma reticulata, new species

General ground color pale yellowish-white, often with a bluish-green tint. Anterior and middle pairs of legs, front, and entire dorsal surface mottled with brown, deepened to fuscous on apex of forewing; head less heavily marked with brown.

Length, 7.75 mm.; width of head, 2.3 mm. Pronotum evenly convex, without depressed areas. Inner apical cell rather large, remaining cells slender.

Male valve broad and triangular, plates elongate, tapering to pointed tips, pygofer very broad and flattened dorsoventrally, easily visible beyond plates laterally. Last ventral segment of female with posterior margin concavely excavated from lateral angles and with a narrow median V-shaped notch.

Holotype male, allotype female, and 1 male paratype from Loreto, Prov. Missiones, Argentina, collected by A. A. Ogloblin in 1931, the holotype on December 18, the allotype and paratype on December 12. Types in collection of the United States Museum, Cat. No. 51671.

Hecaloidia Osborn

(Pl. XXIX, fig. 10; Pl. XXXIII, fig. 3)

Hecaloidia Osborn, Ann. Carn. Mus., vol. 15, no. 1, p. 28, 1923.

Resembling certain species of the genus *Phlepsius* Fieber, but differing from that genus in lacking ramose lines in the forewings. Related to *Mesamia* Ball by the reflexed costal veinlets. Apparently not closely related to either *Hecalus* Ball or *Huleria* Ball, near which it was placed by Osborn, since reflexed veinlets in the costal area of the forewings do not occur in those genera.

Crown flat or slightly concave; anterior margin thin, but not foliaceous, with faint transverse striae. Length of crown on median line, about twice that next eye; apex subangular. Ocelli situated next the eyes. Face broad and flat, nearly straight in profile; lateral margins of genae strongly sinuated below eyes, genae very narrow next clypellus. Pronotum slightly longer than crown, lateral margins short and faintly carinate. Forewing elongate, with distinct appendix, two closed anteapical cells and a few reflexed veinlets in costal area, some of these anterior to the base of the short outer anteapical cell.

Type of the genus, *Hecaloidia nervosa* Osborn, a Bolivian species. No other species belonging to this genus are known to the writer.

Menosoma Ball

(Pl. XXXIII, fig. 6)

Menosoma Ball, Florida Ent., vol. 15, p. 4-5, 1931.

Resembling *Eutettix* Van Duzee in general habitus. Differing from that genus in having the crown more produced medially and rounded to the face, the transverse furrow in the crown absent or very faint, and usually a few reflexed veinlets to the costal margin of the forewing near the outer apical cell. Menosoma also lacks the distinct striae which occur on the crown and pronotum of typical species of Eutettix.

Crown short, but usually distinctly longer medially than next eyes. Ocelli large, situated near eyes. Front narrow, strongly constricted at base of clypellus. Genae broad, lateral margins sinuated below eyes. Forewing with a distinct appendix; closed anteapical cells usually two in number, the outer sometimes divided.

Type of the genus, *Menosoma stonei* Ball, 1931, known only from the southern part of the United States. The following members of the genus occur in South America: *Eutettix cinctus* Osborn and Ball, 1898; *Mesamia fasciata* Osborn, 1923; and *Eutettix neocinctus* Osborn, and *E. elegans* Osborn, 1923.

Bahita, new genus

(Pl. XXIX, fig. 5; Pl. XXXIII, fig. 8)

Intermediate in character between *Eutettix* Van Duzee and *Menosoma* Ball; differing from the former in lacking the distinct striae on the crown and pronotum and in having reflexed veinlets to the costal margin of the forewing; distinct from Menosoma by having a much shorter head and distinct transverse furrow on the crown, which is distinctly margined anteriorly.

Crown short and of nearly uniform length, sometimes slightly longer medially than next the eye; anterior margin carinate or subcarinate. Crown with a distinct transverse furrow across entire width anterior to disk. Ocelli near eyes. Frontal sutures usually extending past ocelli onto vertex and terminating at transverse furrow. Face convex; front broader than in Eutettix or Menosoma; genae broad, with lateral margins sinuated. Pronotum short, lateral margins not carinate. Forewing with a distinct appendix; closed anteapical cells two in number, the outer short and lying obliquely with respect to costal margin; the central narrowed medially; costal area with two or three reflexed veinlets to costal margin near base of outer anteapical cell. Pygofer with a few stout setae.

Type of the genus, *Eutettix infuscatus* Osborn, 1923 (p. 52), from Brazil and Bolivia. The genus, which appears to be limited in distribution to Central and South America, is well represented in that region. The following described species are referred here: *Jassus (Athysanus) palliditarsus* Stål, 1860; *Eutettix irroratus* Osborn, *E. femoratus* Osborn, and *E. laticeps* Osborn, 1923; and *Aligia plena* Van Duzee, 1933, from Costa Rica.

Bandara Ball

Bandara Ball, Bull. Brooklyn Ent. Soc., vol. 26, p. 93, 1931.

Closely related to *Eutettix* Van Duzee, but without the distinct striae on the crown and pronotum which are characteristic of that genus. Differing also in having the outer anteapical cell of the forewing distinctly shorter than in Eutettix and broader distally than basally.

Crown about as in Eutettix, but transverse furrow usually not distinct. Ocelli distant from the eyes about one and one half times their own diameter. Face short and broad as in Eutettix. Lateral margins of pronotum short and faintly carinate. Forewing with a distinct appendix; closed anteapical cells two in number, the second more narrowed medially than is true of Eutettix; outer apical cell unusually large and usually somewhat semicircular in shape. Setae of pygofer short. Color tawny or yellow, usually with opalescent spots on forewing.

Type of the genus, *Eutettix johnsoni* Van Duzee, 1894 (p. 137), a Nearctic species. The only South American representative of the genus known to the writer is *Mesamia hyalina* Osborn, 1923, described from Colombia. Specimens at hand from Trinidad, Grenada, and the Dominican Republic are considered to be this species. Osborn's description of hyalina as having "Abdominal segments of female above punctate at spiracles" apparently refers to the dark depressions near the lateral margins of each segment on the dorsum, as all Cicadellidae examined by the writer have had the spiracles ventral in position.

Atanus, new genus

(Pl. XXXIII, fig. 7)

Closely related to *Opsius* Fieber, with which it agrees in general habitus, but differing in having the head of nearly the same width as the pronotum, the crown more nearly flat, the front more elongate and narrow, and the margins of the outer anteapical cell of the forewing nearly parallel.

Crown rather flat, not rounded to the face anteriorly, but lacking a distinct margin, median length distinctly greater than the length next the eyes. Face triangular, front narrow, genae joining clypellus only as a very narrow sclerite. Lateral margins of pronotum not carinate. Forewing with a distinct appendix, closed anteapical cells two in number, the outer shorter and more slender than the inner and with sides nearly parallel. Pygofer with numerous stout setae.

Type of the genus, *Eutettix dentatus* Osborn, 1923 (p. 57), described from Bolivia and also occurring in northern Argentina. The genus will also include *Eutettix tesselatus* Osborn, 1923; *Thamnotettix lobatus* Osborn, 1923; and twenty-five or more species closely related to dentatus. These are for the most part apparently undescribed, although several of the species described by Berg, 1881, 1884, as Athysanus probably belong here.

Opsius Fieber

Opsius Fieber, Verh. Zoöl.-Bot. Ges. Wien, vol. 16, p. 505, 1866.

Comparatively small, rather wedge-shaped leaf hoppers with a short, broad head and two anteapical cells in the forewing. Genae joining the clypellus as comparatively broad sclerites.

Crown slightly longer medially than next the eye, rounded downward to the front. Ocelli large, distant from the eyes about two and one half times their own diameter. Face broad and short; lateral margins of genae strongly sinuated below eyes; clypellus with sides approximately parallel. Lateral margins of pronotum very short. Forewing opaque except apically and along costal margin; a distinct appendix present; outer anteapical cell narrowed at both ends. Setae on pygofer short and stout.

Type of the genus, *Opsius stactogalus* Fieber, 1866, a species now cosmopolitan in distribution but thought to have come originally from the Mediterranean region.

Exitianus Ball

(Pl. XXXIII, figs. 10, 10A)

Exitianus Ball, Trans. Amer. Ent. Soc., vol. 55, p. 5, 1929.

Mimodrylix Zachvatkin, Moscow Univ., Sci. Proc., No. 4, p. 108, 1935. (Type, *Thamnotettix capicola* Stal, 1855, an African species). (New synonymy.)

Most closely related to *Nephotettix* Matsumura, with which it agrees in the shape of the clypellus and in having the appendix extended around the apex of the forewing. Differing from Nephotettix in lacking the transverse furrow on the crown, in having the crown rounded to the face rather than margined anteriorly, and in having the outer anteapical cell comparatively large, normally truncate at both ends, and extending to the fourth apical cell, rather than very small, acuminate posteriorly, and not extending to the base of the fourth apical cell. Exitianus differs from *Athysanus* Burmeister and *Euscelis* Brullé, where the species have frequently been placed, by the shape of the clypellus and the appendix of the forewing.

Crown longer medially than next the eyes, disk convex and anterior margin rounded to the face. Ocelli large, distant from the eyes about their own diameter. Clypellus unusually long, narrowed gradually from base to apex. Lateral margins of genae sinuated below eyes. Forewing hyaline, appendix unusually large, closed anteapical cells two in number. Pygofer and distal portion of ovipositor sheath of female with a few stout setae. Plates of male with a row of large setae along lateral margins, posterior margins of pygofer with two or three unusually stout setae. Ovipositor sheath extending beyond pygofer.

Type of the genus, *Cicadula exitiosa* Uhler, 1880 (p. 72), which is at present considered to be a synonym of *Jassus* (*Thamnotettix*) *obscurinervis* Stål, 1859 (p. 293), described from Brazil. Other American species belonging to the genus are the following: *Athysanus picatus* Gibson, 1919, and its synonym *A. miniaturatus* Gibson, 1919; *Euscelis quadratula* Osborn, 1923; *Euscelis pallida* Osborn, 1926; and *Athysanus digressus* Van Duzee, 1933. *Exitianus armus* Ball, 1923, does not belong to the genus as here restricted, and may be referred to the already crowded *Thamnotettix* Zetterstedt until it can be disposed of more satisfactorily. African, European, and Asiatic species belonging to *Exitianus* are as follows: *Thamnotettix* *capicola* Stål, 1855; *Athysanus fusconervosus* Motschulsky, 1863; *Jassus* (*Thamnotettix*) *taeniaticeps* Kirschbaum, 1868, *Athysanus indicus* Distant, *A. nanus* Distant, and *A. atkinsoni* Distant, 1908; *Athysanus transversalis* Matsumura, 1908; *Athysanus simillimus* Matsumura, 1914; and probably several others described as *Athysanus, Euscelis,* or *Phrynomorphus. Phrynomorphus* Curtis, 1833, type *nitidus* Curtis, 1833, is a synonym of *Euscelis* Brullé. The specific synonymy of all the species of Exitianus listed above is much involved and a study of much more material than is now available is needed to decide some of the points in question.

It would be difficult to find a more homogeneous group of species than those listed above, and there can be no doubt about the affinities of the American, European, Asiatic, and African species.

Hegira, new genus

(Pl. XXXIII, fig. 9)

Related to *Ophiola* Edwards and *Euscelis* Brullé, but differing from both in having the face longer and the frontal sutures extending beyond the ocelli onto the anterior margin of the crown. Distinct from Ophiola in having the head narrower than the thorax and from Euscelis in having a larger appendix on the forewing.

Crown short, but longer medially than next the eyes, rounded to the face. Ocelli near eyes. Front long, strongly constricted near base of clypellus. Genae broad, lateral margins sinuated. Lateral margins of pronotum faintly carinate. Forewing broad, appendix large, closed anteapical cells two in number, the outer shorter than the central one. Costal area with a vein to costal margin from each end of the outer anteapical cell. Pygofer with numerous large setae. Male plates with many long, slender, silky-appearing setae on outer margins.

Type of the genus, *Hegira brunnea*, n. sp., from northern Argentina. A specimen of the same or a closely related species is at hand from Brazil.

Hegira brunnea, new species

Face brown with numerous pale-yellowish areas, the most constant being transverse marks on the clypeus. Crown yellowish-white with a pair of transverse brown dashes between the eyes, a pair of small spots at the apex, and a pair of larger spots on the posterior margin. Pronotum washed with brown, with numerous irregular pale areas on the anterior submargin. Scutellum brown with two yellowish-white spots on each lateral margin. Forewing subhyaline, marked with brown on veins and in cells, the intracellular marks restricted to the distal area.

Length, 6-6.5 mm. Structure as indicated for the genus.

Male valve broad and short, triangular in shape. Plates together bluntly spoon-shaped, basal width about equal to length.

Last ventral segment of female large, median portion slightly longer than lateral portion, with a small median notch on posterior margin.

Holotype male, allotype female, and 9 male and 7 female paratypes from Loreto, Prov. Missiones, Argentina, collected in 1931 by A. A. Ogloblin, the holotype on December 14, the allotype on December 6, and the paratypes on various dates from November 27 to December 18. Types in the collection of the United States National Museum, Cat. No. 51672.

Eusceloidia Osborn

(Pl. XXX, fig. 1; Pl. XXXIV, figs. 1, 1A)

Eusceloidia Osborn, Ann. Carn. Mus., vol. 15, no. 1, p. 46, 1923.

Superficially resembling macropterous specimens of the fulgorid genus *Bruchomorpha* Newman; apparently related to *Exitianus* Ball by the wing venation, but easily distinguished from that genus by the very large apical cells of the forewing and the greatly swollen clypeus.

Crown short and sloping downward anteriorly, broadly rounded to the face. Ocelli distant from eyes about one and one half times their own diameter. Clypeus greatly swollen, especially next clypellus.

Lateral margins of genae sinuated, genae very narrow next clypellus. Pronotum short, lateral margins very short and not carinate. Forewing rather broad, appendix and first and second apical cells unusually large. Closed anteapical cells two in number, the outer about half as long as the inner and lying along distal portion of that cell. The hind wings of the single specimen upon which the original description of the genus was based are badly torn, but the venation appears to be normal for the group, with four apical cells.

Type of the genus, *Eusceloidia nitida* Osborn, a Bolivian species, and, so far as known, the only representative.

Faltala, new genus

(Pl. XXXIV, fig. 2)

Broad, flat, and relatively short leaf hoppers, brachypterous so far as known. Resembling *Athysanella* Baker in general habitus, but probably not closely related to that genus.

Crown flat and broad, separated from the face by a distinct margin which is subcarinate at least apically. Median length of crown about twice as long as length next the eyes. Ocelli small, distant from the eyes two or three times their own diameter. Face broad and short, front unusually broad, genae with lateral margins incised below eyes. Pronotum shorter than crown, lateral margins comparatively long and subcarinate. Macropterous forms, if they occur, may be expected to have the lateral margins of the pronotum shorter. Forewing quadrangular in shape, truncate apically, not reaching to posterior margin of third abdominal segment, venation reticulated. Abdomen broad and much flattened, much broader than thorax. Pygofer with few or no setae.

Type of the genus, *Faltala brachyptera*, n. sp., from northern Argentina. No other species are included in the genus.

Faltala brachyptera, new species

General ground color pale yellowish-brown, with irregular ivory-colored markings on crown, pronotum, forewing, and abdomen, these markings, except those of forewing, margined with fuscous. Markings of crown illustrated in drawing (Pl. XXXIV, fig. 2), those of abdomen consisting of two oblique dashes near each lateral margin on segments 3 to 7, inclusive, and 3 broader dashes on each segment between the lateral dashes, all these arranged so as to form longitudinal stripes. Eighth abdominal segment with a fuscous spot near each lateral margin dorsally. Median portion of posterior margin of female genital segment black.

Length of male, 3 mm.; of female, 3.75 mm.; greatest width about 1.5 mm. Crown subangular apically. Posterior margin of pronotum broadly and shallowly incised. Scutellum broad and short.

Male valve broad and short. Plates short and broad, extending only a short distance beyond apex of valve. Pygofer terminating in short points posteriorly. Last ventral segment of female with median portion of posterior margin slightly produced and tridentate.

Holotype male, allotype female, and 3 female paratypes from Loreto, Prov. Missiones, Argentina, collected in 1931 by A. A. Ogloblin, the holotype on November 29, the allotype on November 25, 1 paratype on November 27, and the other 2 on November 29. Types in the collection of the United States National Museum, Cat. No. 51673.

Brazosa, new genus

(Pl. XXXIV, fig. 3)

Related to the Thamnotettix group, which it resembles in general habitus, but differing in having the pronotum much larger and humped in profile, and in the shape of the crown.

Crown short and broad, median portion sometimes slightly produced. Crown not separated from face by a distinct margin. Face broad, clypellus extended beyond genae, lateral margins of genae sinuated. Pronotum large, lateral margins carinate. Forewing hyaline, closed anteapical cells two in number.

Type of the genus, *Thamnotettix picturellus* Baker, 1923 (p. 532), (*Thamnotettix pictus* Osborn 1923, from Brazil, not *Thamnotettix pictus* Lethierry, 1875). The genus will also contain *Thamnotettix amazonensis* Osborn, 1923, from Brazil.

Alaca, new genus

(Pl. XXXIV, fig. 4)

Related to the *Thamnotettix* group, with which it agrees in general habitus and wing venation, but differing in having the head broader than the pronotum and the crown short and of uniform length.

Crown short and rounded downward to the face. Face convex, clypellus strongly constricted. Pronotum short, lateral margins weakly carinate. Forewing comparatively slender, closed anteapical cells two in number, appendix distinct.

Type of the genus, *Alaca longicauda,* n. sp., from northern Argentina. The genus will also include *Agallia multipunctata* Osborn, 1923, and an apparently undescribed species from Bolivia.

Alaca longicauda, new species

General color sordid brown with a round black spot above each ocellus, a smaller fuscous spot on the pronotum behind each eye, and fuscous marks on the base of the scutellum.

Length of male, 5.5–6 mm. Forewing subhyaline.

Male valve very small, plates rather delicate and thin, strongly diverging distally and triangular in outline. Pygofer very long, about three times as long as plates, rounded apically in profile.

Holotype male and 28 male paratypes from Loreto, Prov. Misiones, Argentina, collected in 1931 by A. A. Ogloblin, the holotype on December 18 and the paratypes on various dates from November 25 to December 18. Types in the collection of the United States National Museum, Cat. No. 52091.

Onura, new genus

(Pl. XXXIV, fig. 7)

Related to *Thamnotettix* Zetterstedt in general structure and agreeing with that genus in the venation of the corium of the forewing. Distinct from Thamnotettix and related genera in that the face is strongly receding and short, the apex of the clypellus does not extend caudad of the posterior margin of the eyes, and the forewing has only one distinct claval vein.

Disk of crown shallowly concave, margin of crown broadly rounded to the face; face in profile most swollen between the antennae, constricted at the base of the clypellus. Ocelli large and situated near eyes. Clypellus short and nearly parallel sided; lateral margins of genae sinuated. Pronotum short, lateral margins not carinate. Forewing long, appendix distinct, costal margin coriaceous on basal two thirds, anteapical cells lying parallel to costal margin, the outer shorter and more slender than the central one. There is occasionally a trace of the second claval vein at the inner basal angle of the clavus. Claval vein usually with a cross vein to claval suture. Pygofer sparsely clothed with rather short setae.

Type of the genus, *Onura eburneola,* n. sp., from northern Argentina. Two other species, one from northern Argentina and the other from Brazil, will fall in this genus.

Onura eburneola, new species

Crown, anterior half of pronotum, and costal margin of forewing ivory colored. Ocelli orange. Upper portion of face, deflexed margins of pronotum, and sides of abdomen also ivory, below dirty yellow to fuscous. Crown and pronotum with faint, irregular yellow markings; posterior half of pronotum and all of scutellum dirty white. Forewing grayish-subhyaline, appearing slate-colored owing to the darker wings and dorsum of abdomen, with a fuscous stripe along radius parallel to costal margin and extending to apex of outer anteapical cell.

Length of female, 4.75 mm. Crown produced and bluntly angled, median length equal to length of pronotum and nearly twice the length of the crown next the eyes.

Last ventral segment of female subtruncate posteriorly, with a narrow, median, V-shaped notch which extends nearly to the base of the segment.

Holotype female and 1 female paratype from Loreto, Prov. Missiones, Argentina, collected in 1931 by A. A. Ogloblin, the holotype on December 18 and the paratype on December 14. Type in the collection of the United States National Museum, Cat. No. 51674.

Thamnotettix Zetterstedt

Thamnotettix Zetterstedt, Ins. Lapp., column 292, 1838.

Cicadula Zetterstedt, Ins. Lapp., column 296, 1838 (type, *Cicada quadrinotata* Fabricius, 1794, a palearctic species).

Thamnus Fieber, Verh. Zoöl.-Bot. Ges. Wien, vol. 16, p. 505, 1866 (type, *Thamnotettix confinis* Zetterstedt, 1838, a palearctic species).

Relatively elongate, slender species, without a distinct margin between the crown and the face of the head and with only two anteapical cells in the forewing.

Crown usually short, median length slightly longer than that next eyes. Head narrower or as wide as pronotum. Face relatively flat, lateral margins of genae sinuated. Ocelli situated near eyes. Lateral margin of pronotum short, not or only feebly carinate. Forewing relatively broad, second cross vein absent, appendix distinct.

Type of the genus, *Cicada prasina* Fallén, 1826, a Palearctic species. The genus as here defined continues to be the catch-all that it has been in the past. While many of the South American species described under this genus have been transferred to other genera, the number remaining is still too large to list here. As here defined the genus is cosmopolitan in distribution.

The genus Cicadula, as fixed by its type quadrinotata, is here considered as a synonym of Thamnotettix, while for the species of the genus Cicadula of authors the name *Macrosteles* Fieber (type, *Cicada sexnotata* Fallén, 1806) is available. Macrosteles apparently does not occur in South America.

Acinopterus Van Duzee

(Pl. XXX, fig. 2; Pl. XXXIV, fig. 5)

Acinopterus Van Duzee, Psyche, vol. 6, p. 308, 1892.

Related to *Thamnotettix* Zetterstedt by the structure of the short, bluntly angled crown, but differing from that genus in that the forewing lacks a distinct appendix and the inner margin is continued in a nearly straight line from the apex of the clavus to the bluntly pointed apex of the forewing.

Head narrower than pronotum; crown short and rounded to the front, longer medially than next the eyes. Ocelli situated near eyes. Face relatively flat; lateral margins of genae sinuated below eyes. Pronotum short and broad, lateral margins carinate and diverging posteriorly, pronotum broadest near posterior margin. Forewing with two, or occasionally three, closed anteapical cells, often with extra cross veins, particularly in clavus and along costal area opposite outer anteapical cell. Second apical cell of hind wing unusually narrow.

Type of the genus, *Acinopterus acuminatus* Van Duzee, 1892b (p. 308), an American species. So far as known, this is the only species of the genus which occurs in South America, and it appears to be limited to the extreme northern portion of the continent. Specimens from Colombia have been examined by the writer.

Chlorotettix Van Duzee

(Pl. XXVII, figs. 1, 1A, 1B, 1C, 1D; Pl. XXXIV, fig. 8)

Chlorotettix Van Duzee, Psyche, vol. 6, p. 306, 1892.

Closely related to *Thamnotettix* Zetterstedt by the venation and general form; differing from that genus in having the crown more rounded and of nearly uniform length throughout its width, and in that the forewings are never opaque.

Crown short and rounded to the front, median length equal to or slightly greater than that next to the eyes. Ocelli situated near eyes. Front comparatively slender; lateral margins of genae not strongly sinuated below eyes. Lateral margins of pronotum short and weakly carinate. Forewing long, without extra cross veins; closed anteapical cells two in number; appendix distinct. Pygofer with numerous stout setae.

Type of the genus, *Bythoscopus unicolor* Fitch, 1851 (p. 58), a Nearctic species. The genus appears to be restricted in distribution to the Americas and is represented in South America by *Chlorotettix breviceps* Baker and *Ch. minimus* Baker, 1898; *Ch. bakeri* Sanders and De Long, 1922; *Ch. neotropicus* Jensen-Haarup, 1922; *Ch. aberrans* Osborn, *Ch. delicatus* Osborn, *Ch. dilutus* Osborn, and *Ch. truncatus* Osborn, 1923; and *Thamnotettix luteosus* Baker. In addition to the above, there are at hand representatives of nineteen apparently undescribed species belonging to the genus.

Benala, new genus

(Pl. XXXIV, fig. 10)

Superficially resembling *Deltocephalus* Burmeister in size and general habitus, but different from that genus in having only two anteapical cells in the forewing and in that the ocelli are distant from the eyes.

Crown over twice as long medially as next the eyes, not distinctly separated from the face, but with the apex pointed. Ocelli over one third distance from eyes to apex of head. Face strongly receding, lateral margin of genae strongly sinuate. Pronotum shorter than head. Forewing with appendix distinct and inner apical cells unusually large.

Type of the genus, *Deltocephalus tumidus* Osborn, 1923, from Bolivia. No other species are referred to the genus.

Cortona, new genus

(Pl. XXX, fig. 6; Pl. XXXIV, fig. 6)

Related to *Lonatura* Osborn and Ball, which it resembles in size and general habitus. Differing from that genus in having a longer, more angled head and no closed anteapical cells in the forewing.

Head large in proportion to body, distinctly wider than pronotum. Crown produced and angled, rounded to face, length greater than length of pronotum. Ocelli situated near eyes. Clypellus unusually broad, tapering apically. Lateral margins of genae sinuated below eyes. Pronotum short, lateral margins very short. Forewing hyaline, appendix distinct, closed anteapical cells absent. Pygofer with numerous large setae.

Type of the genus, *Cortona minuta,* n. sp., from northern Argentina. This is the only species referred to the genus.

Cortona minuta, new species

Color, uniform golden yellow, wings hyaline.

Length of male, 2.3 mm.; length of head, pronotum, and scutellum, 0.9 mm.; width of head, 0.75 mm. Crown longer than pronotum, disk rather flat, median length twice that next the eyes. Forewing extending beyond tip of abdomen.

Male valve broad and short. Plates together subtriangular, tapering to pointed tips.

Holotype male from Loreto, Prov. Misiones, Argentina, December 3, 1931, A. A. Ogloblin. Type in the collection of the United States National Museum, Cat. No. 51675.

Stirellus Osborn and Ball

(Pl. XXXIV, figs. 9, 9A)

Athysanus subgenus *Stirellus* Osborn and Ball, Ohio Nat., vol. 2, p. 250, 1902.

Related to *Aconura* Lethierry,* with which it agrees in the shape of the head, in having a long clypellus, a small appendix and two closed anteapical cells in the forewing, and a long ovipositor sheath. Differing from Aconura in being shorter and more robust, with a shorter and less pointed head and broader, shorter anteapical cells in the forewing. *Anemochrea* Kirkaldy, *Anemolus* Kirkaldy, *Phrynophyes* Kirkaldy, *Nandidrug* Distant, and *Paivanana* Distant are all related to Stirellus and Aconura.

Small leaf hoppers. Crown produced and bluntly angled, rounded to the front, disk somewhat flattened. Head often subconical. Clypellus nearly parallel sided, extending beyond normal curve of genae, apex truncate. Lateral margins of genae sinuated. Pronotum shorter than crown, lateral margins very short and not carinate. Forewing comparatively broad, not reaching to tip of ovipositor sheath, appendix small. Ovipositor sheath extending well beyond apex of pygofer; pygofer of female usually with a few short, stout setae.

Type of the genus, *Athysanus bicolor* Van Duzee, 1892a (p. 114), an American species. In addition to *bicolor* the genus is known to be represented in South America by *Athysanus* (*Stirellus*) *mexicanus* Osborn and Ball, 1902, and two other species from northern Argentina.

Penestirellus Beamer and Tuthill

Penestirellus Beamer and Tuthill, Jour. Kans. Ent. Soc., vol. 7, pp. 21-22, 1934.

Related to *Stirellus* Osborn and Ball by the subconical head and long clypellus, but differing in having three closed anteapical cells in the forewing instead of two and in lacking an appendix. Differing from *Deltocephalus* Burmeister and related genera by the shape of the crown and facial sclerites.

Crown and face together subconical, disk of crown relatively flat, margin rounded to the face. Ocelli small and situated next the eyes. Front long, clypellus with sides nearly parallel and apex truncate or excavated and extended well beyond normal curvature of margins of genae. Lateral margins of genae strongly sinuated below eyes. Pronotum and scutellum unusually short. Hind wing slender, with anal area much reduced in size. Ovipositor sheath extended beyond pygofer.

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* The writer has not examined *Aconura jakolevi* Lethierry, 1876, the type of the genus. The generic concept is based on a study of several Japanese species.

Type of the genus, *Penestirellus catalinus* Beamer and Tuthill, 1934, known only from southern Arizona. The genus is represented in South America by an apparently undescribed species from northern Argentina.

Baldulus Oman

Baldulus Oman, Proc. Ent. Soc. Wash., vol 36, p. 79, 1934.

Related to *Macrosteles* Fieber (*Cicadula* of authors), with which it agrees in wing venation, but differing from that genus in being elongate and slender with a produced and angled crown. Resembling *Balclutha* Kirkaldy and *Nesosteles* Kirkaldy in the shape and venation of the forewing, but with four apical cells in the hind wing.

Crown produced and bluntly angled, rounded to the face without a distinct margin anteriorly. Ocelli small, distant from the eyes about one and one half times their own diameter. Face elongate, lateral margins of genae distinctly sinuated. Lateral margins of pronotum faintly carinate. Forewing with a distinct appendix, anteapical venation, as here interpreted, with outer cell absent and inner cell open basally, resulting in only one closed anteapical cell. The present interpretation of the venation of the hind wing results in four apical cells instead of three.

Type of the genus, *Baldulus montanus* Oman, 1934, known to occur only in southern Arizona. In addition to the two species originally referred to the genus, it will also include *Cicadula maidis* De Long and Wolcott, 1923, the only representative of the genus that is known to occur in South America. The writer has examined specimens of maidis from Puerto Rico, the type locality; Cuba; Coahuila, Mexico; Temple, California; and Tucuman, Argentina. The Argentine specimens were recorded "on sugar beet" and the California material was reported to be damaging young sweet corn.

Agelina, new genus

Related to *Macrosteles* Fieber (*Cicadula* of authors), with which it agrees in the venation of forewing and in general habitus, but differing from that genus in having only three apical cells in the hind wing. In the character of the venation of the hind wings the genus shows affinities to *Balclutha* Kirkaldy and *Nesosteles* Kirkaldy, but differs from these genera in several important structural details.

Crown produced and rounded, distinctly longer medially than next the eye. Ocelli distant from the eyes about one and one half times their own diameter. Face relatively broad. Lateral margins of pronotum short and not carinate. Forewing relatively broad and with a distinct appendix and one closed anteapical cell. Hind wing with three apical cells.

Type of the genus, *Agelina punctata,* n. sp., from Brazil and Argentina. No other species is referred to the genus.

Agelina punctata, new species

General ground color sordid yellowish-green; forewings smoky. Head marked with fuscous to black as follows: Face with short, broken, transverse arcs and a curved transverse band between and below the ocelli; crown with a transverse bar behind ocelli, this broken on median line and with lateral extremities curved downward between ocelli and eyes, and a round spot on each side of median line behind transverse bar. Base of pronotum often with irregular dark marks. Veins of forewings pale. Coloration extremely variable, transverse bar on crown sometimes obsolete and other markings indistinct.

Length of female, 3.25-3.75 mm. Structural details as indicated for the genus.

Posterior margin of last ventral segment of female subtruncate, very slightly sinuated and with a faint median notch.

Holotype female and 2 female paratypes from Loreto, Prov. Missiones, Argentina, December 18, 1931, collected by A. A. Ogloblin. Type in the collection of the United States National Museum, Cat. No. 51676.

Balclutha Kirkaldy

(Pl. XXX, figs. 4, 4A; Pl. XXXV, fig. 1)

Gnathodus Fieber (nec Pander, 1856), Verh. Zoöl.-Bot. Ges. Wien, vol. 16, p. 505, 1866 (type, *Cicada punctata* Thunberg, 1782).

Balclutha Kirkaldy, Entomologist, vol. 33, p. 243, 1900 (new name for *Gnathodus* Fieber).

Eugnathodus Baker, Invert. Pacifica, vol. 1, p. 1, 1903 (type, *Gnathodus abdominalis* Van Duzee, 1892, which is at present considered to be congeneric with *punctata* Thunberg.

Slender, relatively small leaf hoppers, with a short head which is narrower than the thorax. Forewing long and slender, with a large appendix and only one closed anteapical cell.

Crown slightly longer medially than next eyes, median length about one third median length of pronotum. Lateral margins of pronotum short but diverging posteriorly, pronotum widest some distance behind eyes. Wing with three apical cells, the reduction caused by fusion of inner fork of radius and outer fork of media in apical region. Basal segment of hind tarsus with a distinct groove-like excavation on inner ventral surface at base.

Type of the genus, *Cicada punctata* Thunberg, 1782 (pl. 21), a Holarctic species. An apparently undescribed species from Bolivia is the only South American form referred to this genus.

Nesosteles Kirkaldy

(Pl. XXXV, fig. 2)

Nesosteles Kirkaldy, Hawaiian Sugar Planter's Assoc. Expt. Sta. Div. Ent. Bull. 1, p. 343, 1906.

Anomiana Distant, Fauna British India, Rhynchota, vol. 8, p. 109, 1918 (type, *Anomiana longula* Distant, 1918). (New Synonymy.)

Agellus De Long and Davidson, Ohio Jour. Sci., vol. 33, p. 210, 1933 (type, [*Eugnathodus*] *Agellus neglecta* De Long and Davidson, 1933).

Closely related to *Balclutha* Kirkaldy, differing in having the head broader, the crown shorter and usually not distinctly produced medially, the pronotum not distinctly wider than the head and with its lateral margins not diverging posteriorly, and the forewing usually not so long. Other characters as in Balclutha.

Type of the genus, *Nesosteles hebe* Kirkaldy, 1906, described from the Viti Isles. The genus, and many of the species included therein, is practically cosmopolitan in distribution, at least in the warmer regions of the world. This group is very closely related structurally to *Balclutha*, but is here retained as a distinct genus on the basis of the doubtfully distinct structural characters mentioned above and the apparent difference in distribution, *Balclutha* occurring primarily in Holarctic or Alpine regions while Nesosteles is the common form in warmer regions. The following species of the genus are recorded from South America: *Eugnathodus lineatus* Osborn, 1924, *E. flavescens* Baker, 1903, and *E. lacteus* Baker, 1903; the last two originally described from Central America and recorded from South America by Osborn in 1924. However, *E. lacteus* Baker is a synonym of *Gnathodus incisus* Matsumura, 1902, which will also have as synonyms *Eugnathodus bisinuatus* De Long, 1923, *Eugnathodus pallidus* Osborn, 1926, *Eugnathodus bifurcatus* De Long and Davidson, 1933, *Nesosteles areolata* Obsorn, 1934, and *Nesosteles tutuilana* Osborn, 1934. (New synonymy.) The last three names are included on the authority of Davidson and De Long, 1935 (p. 106-107), who suppressed them as synonyms of bisinuataus. *Balclutha hyalina* Osborn, 1926, which was also listed by Davidson and De Long as a synonym of bisinuatus, is here removed from synonymy. *Nesosteles incisa*

Matsumura was described from Japan and is known to occur in the Philippines and Hawaiian Islands in addition to the localities represented in the above synonymy. Identification of *N. incisa* is from Japanese specimens determined by Matsumura. *N. guajanae* De Long, 1923, is also known to occur in South America and the Philippine Islands.

Idiotettix Osborn

(Pl. XXX, fig. 7; Pl. XXXV, figs. 3, 3A)

Idiotettix Osborn, Ann. Ent. Soc. Amer., vol. 22, No. 3, p. 465, 1929.

Closely related to *Exolidia* Osborn by the shape of the head, the presence of ledges over the antennal sockets, and the shape of the appendix of the forewing, but differing from that genus in having three closed anteapical cells and a basal cross vein in the forewing.

Crown short and broad and of nearly uniform length, sloping downward anteriorly and rounded to the face, median suture at base absent or very short. Ocelli distant from eyes about twice their own diameter. Pronotum broadest just behind eyes, posterior margin roundly excavated medially. Scutellum large. Forewing large, appendix extended around the apex. Outer anteapical cell somewhat triangular in shape, base angled, central and inner anteapical cells truncate basally.

Type of the genus, *Thamnotettix magnificus* Osborn, 1924 (p. 424), from Bolivia. The genus also includes *Idiotettix bolivianus* Osborn, *I. fasciatus* Osborn, and *I. brunneus* Osborn, 1929, and a few apparently undescribed species as well.

Exolidia Osborn

(Pl. XXX, fig. 5; Pl. XXXV, fig. 4)

Exolidia Osborn, Ann. Carn. Mus., vol. 15, No. 1, p. 75, 1923.

General form robust, ledges above antennal pits distinct; forewing without a cross vein between R + M and Cu, and with apex obliquely subtruncate.

Head short and broad; crown broad, sloping downward to the much swollen clypellus, median basal suture absent. Ocelli distant from the eyes about twice their own diameter. Pronotum broadest next posterior margins of eyes, posterior margin concavely excavated. Forewing broad apically, appendix unusually broad opposite apex of inner apical cell, cubitus not forked, R + M forked but once, outer apical veins curved, first apical cell very small. Apical cells three, or possibly four, in number.

Type of the genus, *Exolidia picta* Osborn, a Brazilian species. No other species known to the writer at present can be referred to the genus as above defined.

Neobala, new genus

(Pl. XXX, fig. 3)

Related to *Exolidia* Osborn by the short, rounded crown, but separated from that genus by the venation of the forewing, which has a basal cross vein between R + M and Cu, and an anteapical cell which is truncate basally.

Crown of nearly uniform length, sloping downward anteriorly and rounded to face, disk with numerous fine, longitudinal striae, basal median suture absent or very short. Ocelli distant from eyes about twice their own diameter. Face convex, clypeus somewhat swollen, genae rather broad next clypellus. Pronotum as in *Exolidia.* Forewing slender and tapered apically, apex rounded, appendix large, apical veins not strongly curved as in *Exolidia.*

Type of the genus, *Thamnotettix pallidus* Osborn, 1923 (p. 67), from South America. The genus, which appears to be limited in distribution to tropical South America, will also include *Euscelis quadrimaculata* Osborn, 1923, and *Thamnotettix guaporensis* (new name for *Thamnotettix sordidus* Osborn, 1923, nec *Thamnotettix sordidus* Zetterstedt, 1838).

Conala, new genus

(Pl. XXXV, fig. 5)

Most closely related to *Neobala,* n. g., with which it agrees in wing venation; related to *Idiotettix* Osborn and *Exolidia* Osborn as well as to Neobala by the shape of the pronotum, which is broadest just behind the eyes. The genus differs from the above groups in the much produced and nearly conical head and the fine transverse pronotal striae, and bears a superficial resemblance to *Spangbergiella* Signoret because of the red dorsal markings of the head and thorax, but has no close structural affinities with that genus.

Crown greatly produced, apex narrowly rounded, disk slightly convex and with numerous fine, longitudinal striae, margins rounded to the face, and median basal suture absent. Ocelli small, distant from eyes about four times their own diameter. Face convex, ledge above antennal socket sometimes small. Pronotum with numerous fine, transverse striae, posterior margin angularly incised between basal angles of scutellum. Forewing with a large appendix, one closed anteapical cell, the base of which is truncate, and two claval veins.

Type of the genus, *Spangbergiella fasciata* Osborn, 1923 (p. 29), from Brazil. This is the only species known at present which belongs to the genus.

Coelidiana, new genus

(Pl. XXX, fig. 8; Pl. XXXV, fig. 6)

Related to, and previously included in *Neocoelidia* Gillette and Baker, but differing from that genus, as determined by its genotype *tumidifrons* Gillette and Baker, 1895, in being much more elongate with wings extending well beyond the tip of the abdomen, and in having a carina separating the crown and face. Differing from *Chinaia* Brunner and Metcalf by the presence of the carina between the crown and face and in having only three apical cells in the hind wing.

Crown flat or nearly so, usually somewhat pentagonal in shape, distinctly raised above the eyes and separated from them by a short perpendicular wall, median length always greater than that next the eyes. Face strongly convex; clypellus comparatively slender. Pronotum wider than head, rather short; posterior margin broadly and shallowly incised; lateral margins comparatively long, distinctly carinate, somewhat curved and diverging posteriorly. Scutellum large. Forewing long and slender, with one closed, elongate, triangular anteapical cell. Appendix of forewing either very small or entirely absent.

Type of the genus, *Neocoelidia rubrolineata* Baker, 1898 (p. 290), from Brazil. Other South American species included in this genus are *Neocoelidia bimaculata* Baker and *N. modesta* Baker, 1898, and *N. inflata* Osborn and *N. croceata* Osborn, 1923. *Neocoelidia smithii* Baker, 1898, and probably *N. punctata* Osborn, 1923, and *N. ornata* Osborn, 1924, should be referred to the genus *Chinaia* Bruner and Metcalf.

Chinaia Bruner and Metcalf

(Pl. XXXV, figs. 7, 7A)

Chinaia Bruner and Metcalf, Bull. Brooklyn Ent. Soc., vol. 29, No. 3, pp. 120-121, 1934.

Most closely related to *Neocoelidia* Gillette and Baker and *Jassus* Fabricius by the broad genae, narrow head, long antennae, broad, short pronotum, and the reduced venation of the forewing.

Differing from Neocoelidia in having four apical cells in the hind wing and from Jassus by the venation of the forewing and the narrow costal area of the hind wing.

Crown raised above eyes and separated from them by a short, perpendicular area, rounded downward anteriorly to the front. Crown extending but slightly anterior to the eyes. Ocelli small, distant from the eyes about one third the distance from eyes to median line of vertex. Clypellus strongly constricted near base. Antennae extremely long, usually longer than entire body, basal segments large. Pronotum short, lateral margins diverging posteriorly and feebly carinate, posterior margin broadly and shallowly incised. Forewing long and slender, basal two thirds opaque, appendix small or absent, one closed anteapical cell present.

Type of the genus, *Chinaia bella* Bruner and Metcalf, 1934. The genus is represented in South America by *Neocoelidia smithii* Baker, 1898. *N. punctata* Osborn, 1923, and *N. ornata* Osborn, 1924, probably belong here also.

Chinaia was originally described as a member of the Bythoscopidae because of the position of the ocelli. However, as indicated earlier in this paper, that character, used alone, is unreliable as a criterion for separation of the higher groups. The structure of the head and thorax, as pointed out above, identify Chinaia as a relative of Jassus and related genera. The nymphal stages also bear a close resemblance to the very distinctive nymphs of Jassus.

Jassus Fabricius

(Pl. XXX, figs. 9, 9A; Pl. XXXV, figs. 8, 8A)

Jassus Fabricius, Syst. Rhyng., p. 85, 1803.

Coelidia Germar, Mag. d. Ent., vol. 4, pp. 38, 75, 1821. (Type, *Coelidia venosa* Germar, 1821, from Brazil.)

Comparatively large, robust leaf hoppers with simple venation of forewing, narrow crown, and long face.

Head narrower than thorax, crown unusually narrow, usually about as wide as one eye. Crown comparatively short, disk raised above level of eyes and separated from them by a short perpendicular area. Ocelli large, situated on crown margin about as near to the median line as to the eye. Crown usually rounded to the front, occasionally separated by a distinct margin. Face unusually long, clypeus of about equal width throughout, clypellus usually broadened distally, apex extending beyond genae. Genae reaching clypellus as broad sclerites, lateral margins sinuated. Pronotum short, lateral margins diverging posteriorly and distinctly carinate; carinae about even with costal margins of forewings. Scutellum large. Forewing broad, usually broader apically than medially or basally, appendix distinct, with only one closed anteapical cell which is petiolate basally and truncate distally. Apical cells usually almost parallel margined.

Type of the genus, *Jassus nervosus* Fabricius, 1803, an American species. *J. nervosus* is not known to the writer but the generic description here presented is based on numerous American species believed to be congeneric with nervosus. Coelidia Germar appears to pertain to the longer headed American forms and may be found to be worthy of subgeneric or generic rank when the species are more fully known.

A large number of species from South America have been described in this genus, and since most of them appear to have been correctly placed generically they are not listed below.

Terulia Stål

Terulia Stal, Bidrag till Rio Janeiro-Traktens Hemipter-fauna, Pt. II. K. Svensk. Vet. Akad. Handl., vol. 3, p. 50, 1860.

Similar to Jassus Fabricius but larger and with the anterior and middle tibiae flattened but not broadened. Otherwise as in Jassus.

Type of the genus, *Terulia ferruginea* Stål, 1860, a Brazilian species. The writer has not seen examples of ferruginea, and the above description is based on a specimen which appears to belong to the genus.

Gabrita Walker

Gabrita Walker, List. Homop., Suppl., p. 254, 1858.

Petalopoda Spangberg, Ofv. Vet. Akad. Forh., vol. 36, p. 18, 1879. (Type, *Petalopoda annulipes* Spangberg, 1879, from South America.)

Closely related to *Jassus* Fabricius in all important structural characters except that the fore femora and tibiae are broad and foliaceous.

Type of the genus, *Gabrita annulivena* Walker, 1858, from South America. Neither *annulivena* nor *annulipes* are known to the writer from authentically determined material, but the characterization is based on a single specimen which appears to be *Petalopoda annulipes* Spangberg. *Petalopoda* is placed as a synonym of *Gabrita* on the basis of the descriptions of the two.

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PLATE XXVII

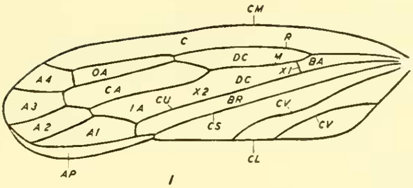
FIG. 1, forewing (× 7); 1A, hind wing (× 7); 1B, face (× 15); 1C, head and thorax (× 15); and 1D, left intermediate tibia and tarsus (× 30), of *Chlorotettix unicolor* (Fitch).

FIG. 2, forewing; and 2A, hind wing, of *Bythoscopus lanio* (Linnaeus) (× 7).

FIG. 3, forewing of *Pachyopsis laetus* Uhler (× 7).

FIG. 4, hindwing of *Oncopsis distinctus* (Van Duzee) (× 15).

PLATE XXVII



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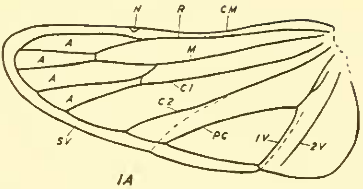
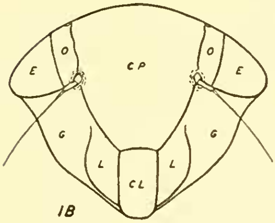


1A

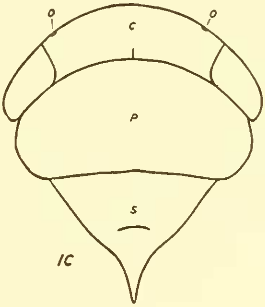
CM-COSTAL MARGIN
R -RADIUS
M -MEDIA
CU-CUBITUS
CS-CLAVAL SUTURE
CV-CLAVAL VEINS
CL-COMMISSURAL LINE
C -COSTAL AREA
BA-BASAL CELL
DC-DISCAL CELLS
BR-BRACHIAL CELL

OA-OUTER ANTEAPICAL
CA-CENTRAL ANTEAPICAL
IA-INNER ANTEAPICAL
X1-FIRST CROSS-VEIN
X2-SECOND CROSS-VEIN POSITION
A1-FIRST APICAL CELL
A2-SECOND APICAL CELL
A3-THIRD APICAL CELL
A4-FOURTH APICAL CELL
AP-APPENDIX

CM-COSTAL MARGIN
R -RADIUS
M -MEDIA
C1-CUBITUS 1
C2-CUBITUS 2
PC-POSTCUBITUS
1V-FIRST VANNAL
2V-SECOND VANNAL
SV-SUBMARGINAL VEIN
H -HAMULUS
A -APICAL CELLS



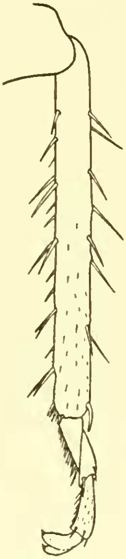
1B



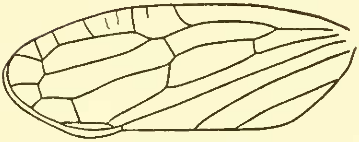
1C

CP-CLYPEUS
CL-CLYPELLUS
O -OCELLOCULAR AREA
E -COMPOUND EYES
G -GENAE
L -LORI

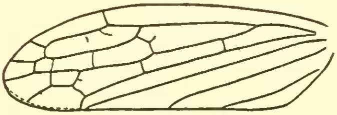
C-CROWN
O-OCELLI
P-PRONOTUM
S-SCUTELLUM



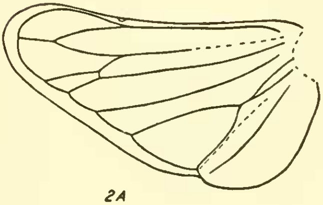
1D



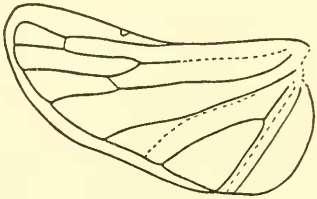
2-BYTHOSCOPUS



3-PACHYOPSIS



2A



4-ONCOPSIS

PLATE XXVIII

FIG. 1, hindwing of *Brasa rugicollis* (Dozier) (× 15).

FIG. 2, forewing of *Bythonia rugosa* (Osborn) (× 7).

FIG. 3, hindwing of *Nionia palmeri* (Van Duzee) (× 15).

FIG. 4, forewing, and 4A, hindwing, of *Xestocephalus pulicarius* Van Duzee (× 30).

FIG. 5, forewing of *Arrugada rugosa* (Osborn) (× 8).

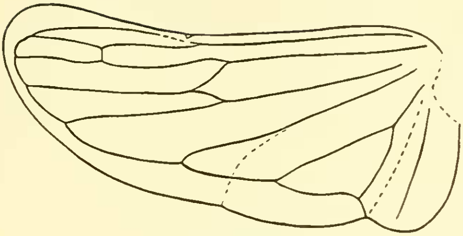
FIG. 6, same of *Egenus acuminatus* Oman (× 7).

FIG. 7, same of *Spangbergiella vulnerata* (Uhler) (× 15).

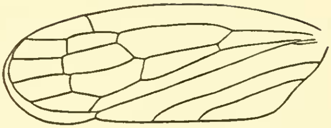
FIG. 8, same of *Bolarga boliviana* (Osborn) (× 15).

FIG. 9, same of *Luheria constricta* Osborn (× 15).

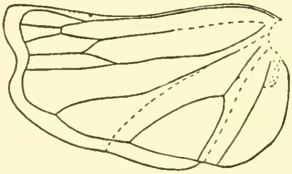
PLATE XXVIII



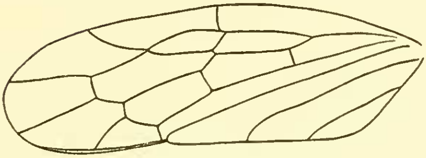
1-BRASA



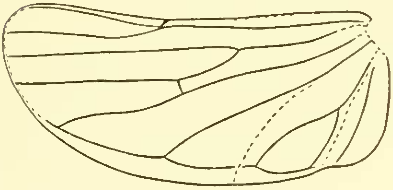
2-BYTHONIA



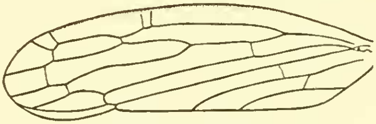
3-NIONIA



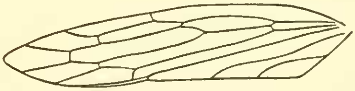
4-XESTOCEPHALUS



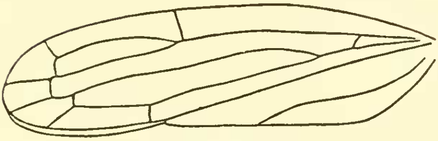
4A



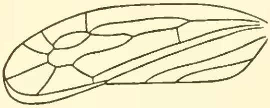
5-ARRUGADA



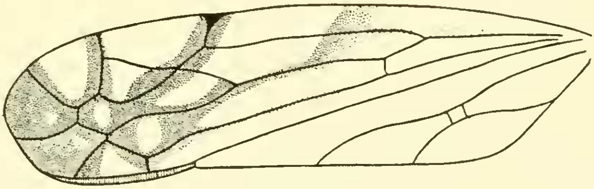
6-EGENUS



7-SPANGBERGIELLA



8-BOLARGA

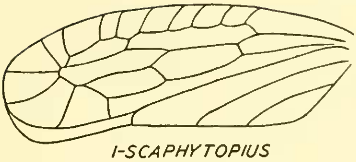


9-LUHERIA

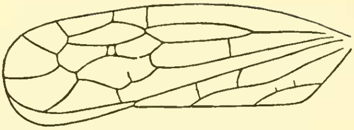
PLATE XXIX

Fig. 1, forewing of *Scaphytopius elegans* (Van Duzee) (× 15).
Fig. 2, same of *Sanctanus sanctus* (Say) (× 15).
Fig. 3, same of *Scaphoidula cingulata* Osborn (× 15).
Fig. 4, same of *Bonamus lineatus* Oman (× 15).
Fig. 5, same of *Bahita infuscata* (Osborn) (× 8).
Fig. 6, same of *Kanorba reflexa* Oman (× 15).
Fig. 7, same of *Garapita garbosa* Oman (× 15).
Fig. 8, same of *Caphodus maculatus* Oman (× 15).
Fig. 9, same of *Agudus typicus* Oman (× 15).
Fig. 10, same of *Hecaloidia nervosa* Osborn (× 15).

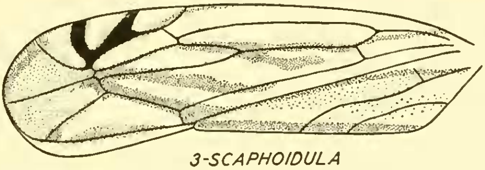
PLATE XXIX



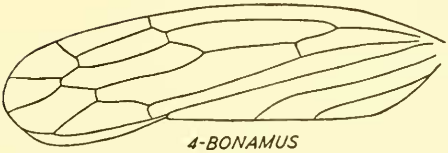
1-SCAPHYTOPIUS



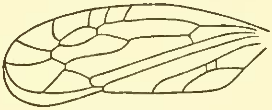
2-SANCTANUS



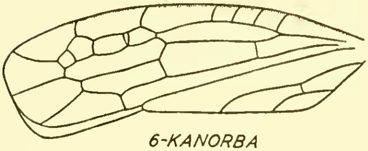
3-SCAPHOIDULA



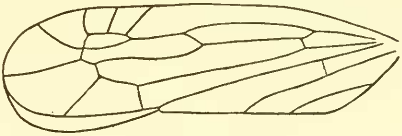
4-BONAMUS



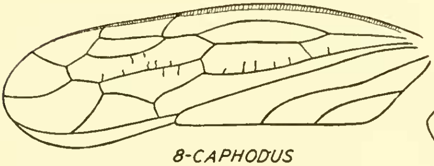
5-BAHITA



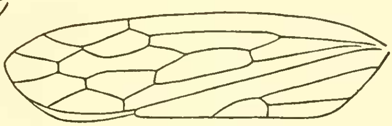
6-KANORBA



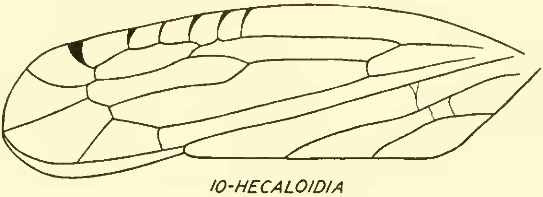
7-GARAPITA



8-CAPHODUS



9-AGUDUS



10-HECALOIDIA

PLATE XXX

FIG. 1, forewing of *Eusceloidia nitida* Osborn (× 15).

FIG. 2, same of *Acinopterus acuminatus* Van Duzee (× 15).

FIG. 3, same of *Neobala pallida* (Osborn) (× 15).

FIG. 4, forewing; and 4A, hindwing, of *Balclutha punctata* (Thunberg) (× 15).

FIG. 5, forewing of *Exolidia picta* Osborn (× 15).

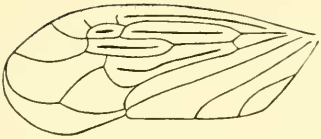
FIG. 6, same of *Cortona minuta* Oman (× 30).

FIG. 7, same of *Idiotettix fasciatus* Osborn (× 8).

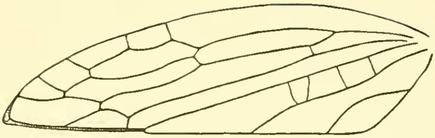
FIG. 8, same of *Coelidiana rubrolineata* (Baker) (× 8).

FIG. 9, forewing; and 9A, hindwing, of *Jassus olitorius* (Say) (× 7).

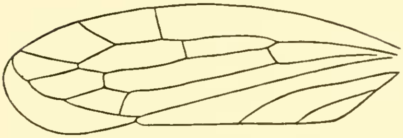
PLATE XXX



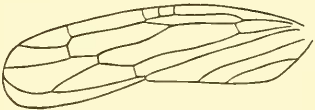
1-EUSCELOIDIA



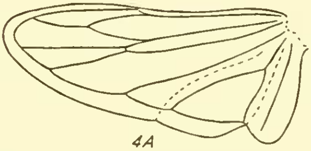
2-ACINOPTERUS



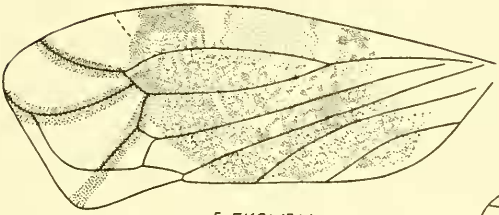
3-NEOBALA



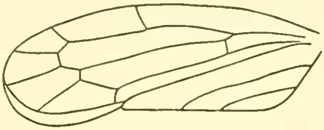
4-BALCLUTHA



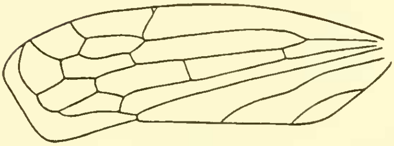
4A



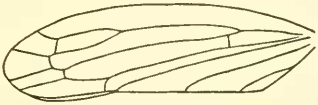
5-EXOLIDIA



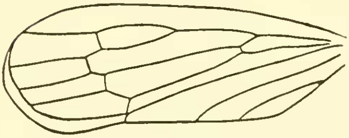
6-CORTONA



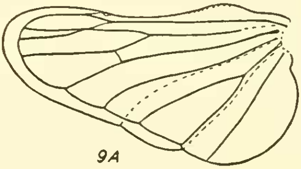
7-IDIOTETTIX



8-COELIDIANA



9-JASSUS

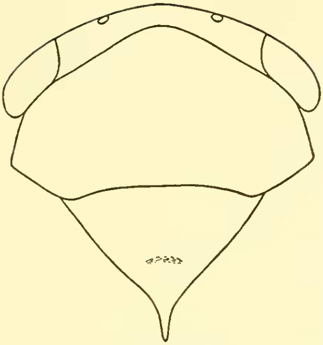


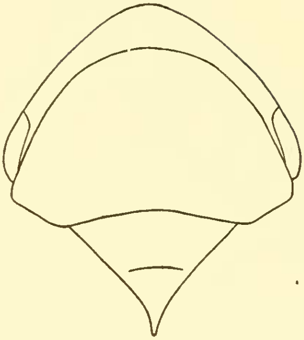
9A

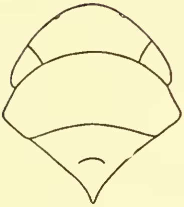
PLATE XXXI

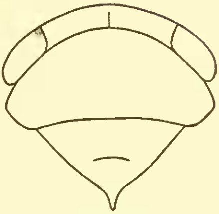
FIG. 1, head and thorax of *Bythonia rugosa* (Osborn) (× 15).
FIG. 2, same of *Nionia palmeri* (Van Duzee) (× 30).
FIG. 3, same of *Xestocephalus pulicarius* Van Duzee (× 30).
FIG. 4, same of *Cariancha cariboba* Oman (× 15).
FIG. 5, same of *Brincardorus laticeps* Oman (× 15).
FIG. 6, same of *Cerrillus notatus* (Osborn) (× 35).
FIG. 7, head and thorax; and 7A, face, of *Arrugada rugosa* (Osborn) (× 15).
FIG. 8, head and thorax of *Luheria constricta* Osborn (× 15).
FIG. 9, same of *Bonamus lineatus* Oman (× 15).
FIG. 10, same of *Egenus acuminatus* Oman (× 15).

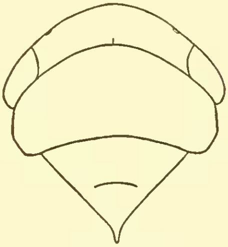
PLATE XXXI

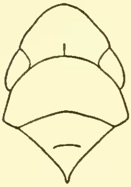

1-BYTHONIA

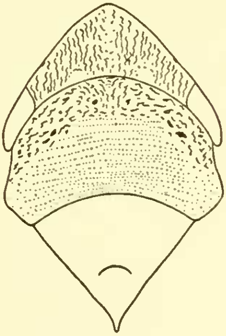

2-NIONIA

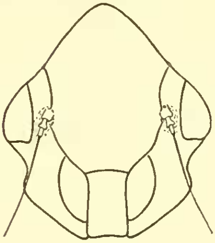

3-XESTOCEPHALUS

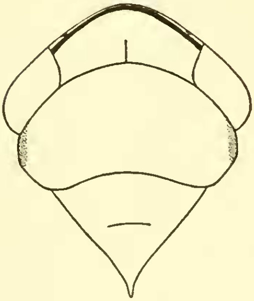

4-CARIANCHA

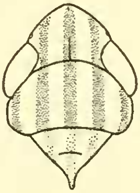

5-BRINCADORUS


6-CERRILLUS


7-ARRUGADA


7A


8-LUHERIA


9-BONAMUS

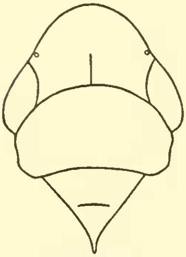

10-EGENUS

PLATE XXXII

Fig. 1, head and thorax of male; and 1A, of female, of *Spangbergiella vulnerata* (Uhler) (× 15).

Fig. 2, head and thorax of *Bolarga boliviana* (Osborn) (× 30).

Fig. 3, head and thorax; 3A, front; and 3B, head in profile, of *Scaphytopius elegans* (Van Duzee) (× 30).

Fig. 4, head and thorax of *Scaphoidula cingulata* Osborn (× 15).

Fig. 5, same of *Sanctanus sanctus* (Say) (× 30).

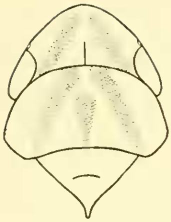
Fig. 6, same of *Osbornellus auronitens* (Provancher) (× 15).

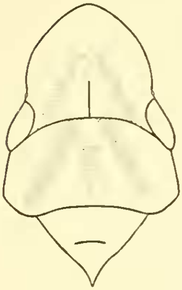
Fig. 7, same of *Garapita garbosa* Oman (× 30).

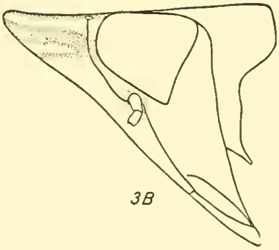
Fig. 8, same of *Portanus stigmosus* (Uhler) (× 15).

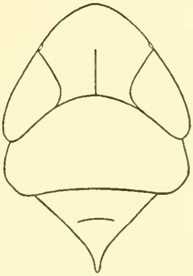
Fig. 9, same of *Agudus typicus* Oman (× 15).

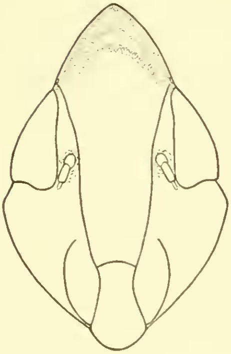
PLATE XXXII

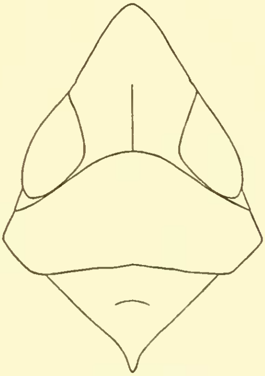

1-SPANGBERGIELLA

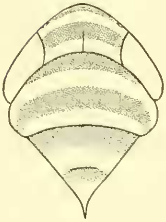

1A

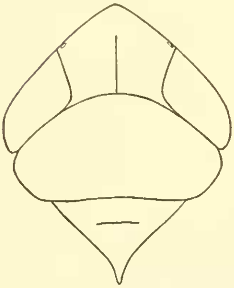

3B

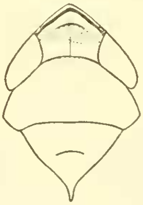

2-BOLARGA

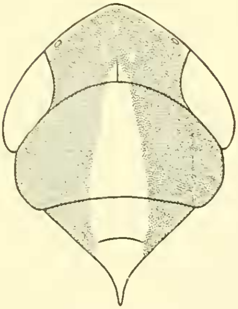

3A

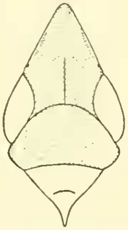

3-SCAPHYTOPIUS


4-SCAPHOIDULA


5-SANCTANUS


6-OSBORNELLUS


7-GARAPITA


9-AGUDUS

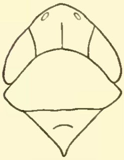

8-PORTANUS

PLATE XXXIII

FIG. 1, head and thorax of *Cumora angulata* Oman (× 30).

FIG. 2, same of *Kanorba reflexa* Oman (× 30).

FIG. 3, same of *Hecaloidia nervosa* Osborn (× 15).

FIG. 4, same of *Caphodus maculatus* Oman (× 30).

FIG. 5, head and thorax; and 5A, face, of *Baroma reticulata* Oman (× 15).

FIG. 6, head and thorax of *Menosoma cincta* (Osborn and Ball) (× 15).

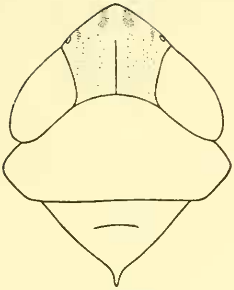
FIG. 7, same of *Atanus dentatus* (Osborn) (× 30).

FIG. 8, same of *Bahita infuscata* (Osborn) (× 15).

FIG. 9, same of *Hegira brunnea* Oman (× 15).

FIG. 10, head and thorax; and 10A, face of *Exitianus obscurinervis* (Stål) (× 30).

PLATE XXXIII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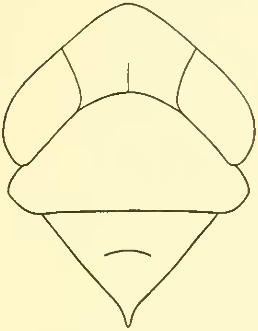
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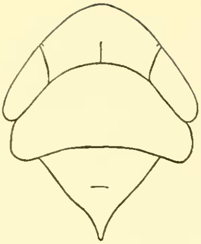
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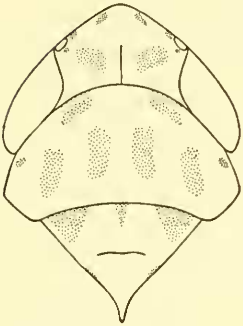
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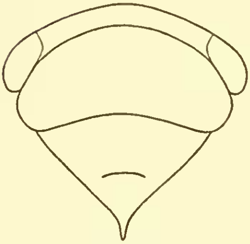
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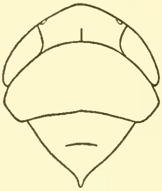
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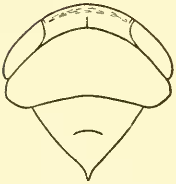
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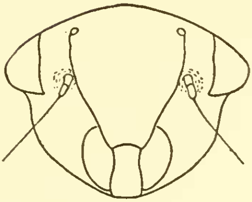
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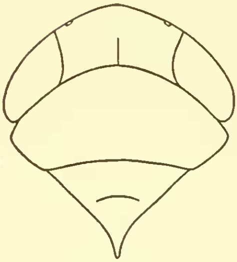
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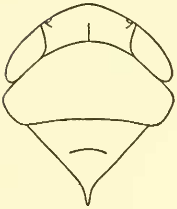
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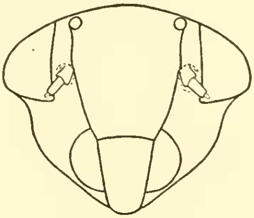
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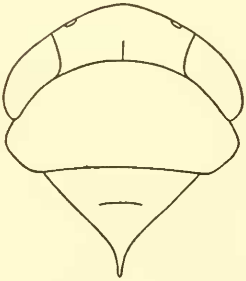

10-EXITIANUS

PLATE XXXIV

FIG. 1, head and thorax; and 1A, head in profile, of *Eusceloidia nitida* Osborn (× 30).

FIG. 2, head and thorax of *Faltala brachyptera* Oman (× 30).

FIG. 3, same of *Brazosa picturella* (Baker) (× 30).

FIG. 4, same of *Alaca longicauda* Oman (× 15).

FIG. 5, same of *Acinopterus acuminatus* Van Duzee (× 15).

FIG. 6, same of *Cortona minuta* Oman (× 30).

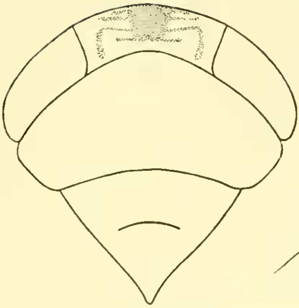
FIG. 7, same of *Onura eburneola* Oman (× 30).

FIG. 8, same of *Chlorotettix unicolor* (Fitch) (× 15).

FIG. 9, head and thorax; and 9A, face, of *Stirellus bicolor* (Van Duzee) (× 30).

FIG. 10, head and thorax of *Benala tumida* (Osborn) (× 30).

PLATE XXXIV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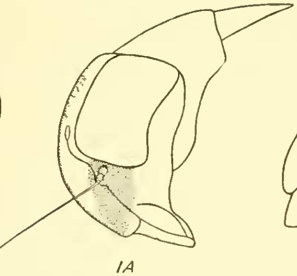
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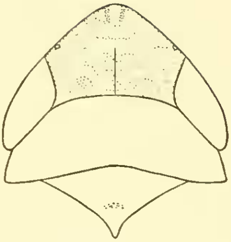
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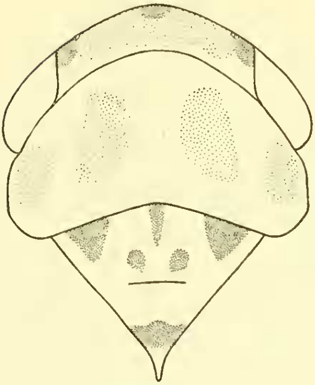
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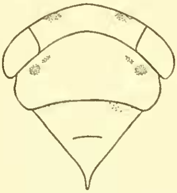
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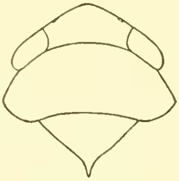
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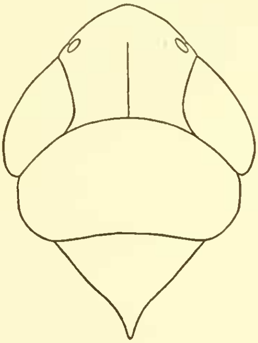
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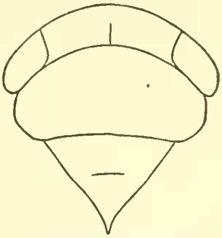
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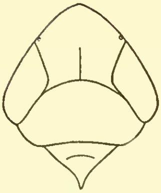
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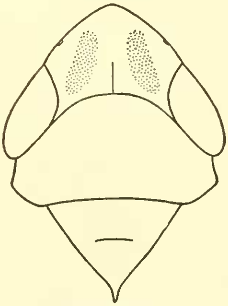
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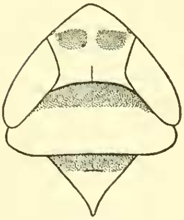
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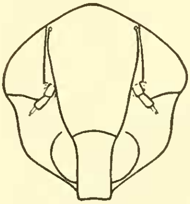

9A

PLATE XXXV

Fig. 1, head and thorax of *Balclutha punctata* (Thunberg) (× 30).

Fig. 2, same of *Nesosteles hebe* Kirkaldy (× 30).

Fig. 3, head and thorax; and 3A, face, of *Idiotettix fasciatus* Osborn (× 15).

Fig. 4, head and thorax of *Exolidia picta* Osborn (× 15).

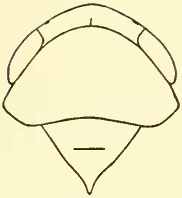
Fig. 5, same of *Conala fasciata* (Osborn) (× 30).

Fig. 6, same of *Coelidiana rubrolineata* (Baker) (× 15).

Fig. 7, head and thorax; and 7A, face, of *Chinaia bella* Bruner and Metcalf (× 15).

Fig. 8, head and thorax; and 8A, face, of *Jassus olitorius* (Say) (× 15).

PLATE XXXV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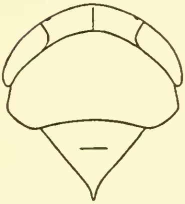
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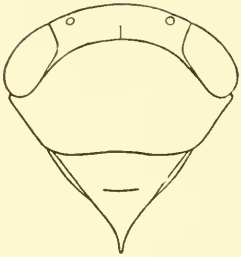
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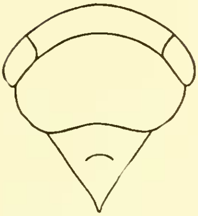
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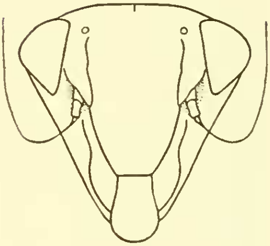
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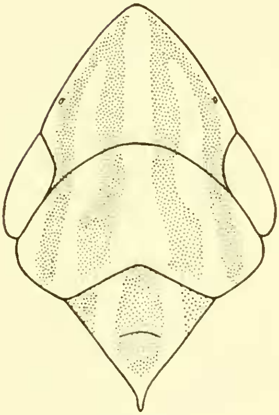
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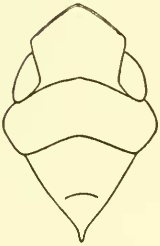
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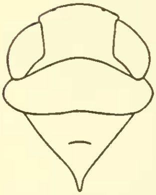
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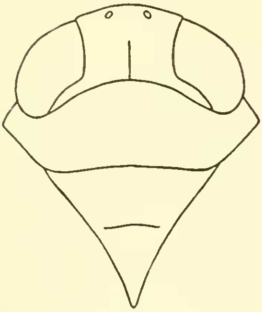
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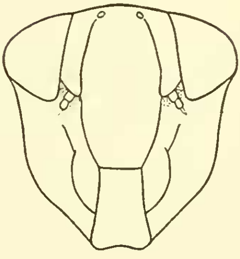
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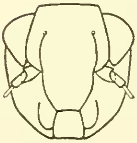
7A

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